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American Veterinary Medical Association

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(Original Official Organ U. S. Vet. Med. Assn.)

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THE OMAHA CONVENTION

Anthrax, hog cholera and equine encephalomyelitis joined forces with the weather man in an attempt to hold down the attendance at the Omaha convention, August 16-20, and partially succeeded. Although it has not been possible to make a final checkup of the registrations, it looks as though the attendance figure would be around 1,475. This would place the Omaha convention of 1937 among the largest A. V. M. A. meetings held to date.

Many members, including a number who were scheduled to contribute to the program, were unable to attend the meeting on account of the seriousness of disease outbreaks, particularly equine encephalomyelitis, in their territories. During the first part of the week, the weather was terribly hot, with the mercury flirting with the century mark, but the temperature moderated by the middle of the week and the absence of properly conditioned air around the Fontenelle became less noticeable.

As was generally expected, Iowa led the attendance with about 200 veterinarians registered, many accompanied by their wives. Nebraska was next with more than 100. Missouri and Kansas

contributed about 50 each, Ohio and Illinois about 40 each, and Minnesota and Indiana about 30 each. Arizona, Georgia, Idaho, Nevada, New Mexico, Rhode Island, Utah, Vermont and West Virginia each had one member registered. Canada contributed five of the approximately 700 members in attendance.

At the meeting of the House of Representatives held Monday evening, the Secretary reported the largest enrollment of members in the history of the Association, as well as the largest number of members with all dues paid to date. He also reported that the goal of 500 applications for membership during the year was in sight. (This goal was not only reached but passed by a comfortable margin. See Applications for Membership.) The circulation of the JOURNAL was reported to be at the highest point in its history and the amount of paid advertising in the current issue of the JOURNAL the largest for any issue during recent years.

Comments on the addresses made at the general sessions on Tuesday are being withheld, as five of these addresses are being published in full in this issue of the JOURNAL. Particularly outstanding was the address of Hon. Robert Fechner, Director of the Civilian Conservation Corps, who concluded with the following statement:

> The CCC recognizes and appreciates the contribution of the veterinarian to this project of national rehabilitation. The veterinary profession may well feel proud.

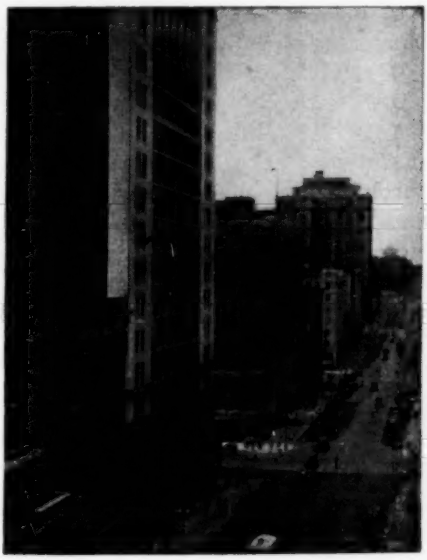
The change in the arrangement of the program from that of previous conventions worked out very well. Instead of the alumni meetings and the President's reception and dance being held Tuesday evening, this time was taken for the polo game and the Den Show at the Ak-Sar-Ben Coliseum. These events were largely attended and thoroughly enjoyed by the visiting veterinarians and members of their families. Special numbers arranged for the benefit of the visitors featured the program of the Den Show. The Bang's Disease Conference is expected to have a very important bearing on the future of the present campaign. Summary notice was served on the peddlers of quack nostrums as to what they may expect if they do not change their ways.

Wednesday and Thursday were given over to the meetings of the five sections. The papers presented at these meetings will be published in the JOURNAL just as rapidly as space is available for them.

The convention banquet was held Wednesday evening, followed by the President's reception and dance. These events

were attended by more than 600, which taxed the facilities of the Fontenelle ball room to the limit. The features of the program included the presentation of the portrait of President Foster by Dr. John L. Tyler, of California; the award of the Twelfth International Veterinary Congress Prize to Dr. Dennie Hammond Udall, of Cornell University, for his work on mastitis, the citation being read by President Foster, and the address of the evening, by Count Ernesto Russo, of Milan, Italy, whose subject was "America as I Find It." This address was a well balanced mixture of philosophical reflections and sparkling humor. Count Russo not only kept everybody in a festive mood but his observations concerning American life, customs and habits gave his hearers much to think about.

The House of Representatives selected New York for the 1938 convention city and the celebration of the 75th anniversary of the organization of the Association. The dates for the meeting were fixed as July 5-6-7-8-9, in order to accommodate those who will participate in the official A. V. M. A. tour of Europe being arranged in connection with the Thirteenth International Veterinary Congress. The tour party will leave New York on July 13, returning to New York on September 15. The Executive Board was authorized to select the time and place for the 1939 meeting.



STREET SCENE IN OMAHA

The House sustained the recommendation of the Executive Board that the proposal to reduce the size of the Board be disapproved. The proposed amendment to give representation to the Veterinary Corps of the Regular Army in the House of Representatives was adopted, and a similar amendment was introduced to give representation to the veterinarians in the employ of the U. S. Bureau of Animal Industry. Another proposed amendment, if adopted, will make it impossible for a member to sit in the House of Representatives and hold membership on the Executive Board at the same time.

Departing from the custom of previous years, the meetings of the various alumni groups were not held until Thursday evening, preceding the final session of the House and the closing session of the meeting. Fifteen different groups got together, representing the alumni of the following veterinary colleges, with a total attendance of 771: Alabama Polytechnic Institute, 8; Chicago Veterinary College, 76; Colorado State College, 49; Cornell University, 24; Iowa State College, 114; Kansas City Veterinary College, 200; Kansas State College, 85; McKillip Veterinary College, 22; Michigan State College, 5; New York University, 4; Ohio State University, 76; Ontario Veterinary College, 31; University of Pennsylvania, 31; Saint Joseph Veterinary College, 43; State College of Washington, 3.

The election of officers resulted as follows: President-elect, Dr. H. D. Bergman, of Iowa State College, Ames, Iowa; first vice-president, Dr. John L. Tyler, of Whittier, Calif.; second vice-president, Dr. Hugh E. Curry, state veterinarian of Missouri, Jefferson City, Mo.; third vice-president, Dr. Matthew E. Gleason, of San Antonio, Texas; fourth vice-president, Dr. W. T. Spencer, of Lincoln, Neb.; fifth vice-president, Dr. William H. Ivens, of Philadelphia, Pa.; secretary-editor, Dr. H. Preston Hoskins, Chicago, Ill.; treasurer, Dr. M. Jacob, of Knoxville, Tenn.; member-at-large of the Executive Board, Dr. Chas. W. Bower, of Topeka, Kan., and chairman of the Executive Board, Dr. Harry W. Jakeman, of Boston, Mass.

At the closing session on Thursday evening, President Foster turned the gavel over to President-elect Brumley, who accepted his badge of authority with a brief address suitable to the occasion. The newly elected officers were escorted to the rostrum and another memorable convention passed into history, as far as business was concerned. The following day was devoted to an elaborately planned clinic at the Ak-Sar-Ben Coliseum, reported elsewhere.

THE CLINIC

One of the highlights of the convention was the clinic, held on Friday, in the commodious Coliseum at Ak-Sar-Ben Field. The clinic was divided into seven sections: horses, cattle, swine, sheep, dogs and cats, poultry and a pathology and parasite exhibit. The large-animal section drew the largest attendance during the day.

A platform about four feet from the floor was provided for the large-animal demonstrations. Stocks and an operating table were set up on the platform, making it possible for all persons seated near it to view the operations and demonstrations. Those on horses included the examination of mares for pregnancy and diseased ovaries, and surgical work on the operable cases. Other demonstrations were amputation of the penis, facial trephining, nerve-blocking and roaring operations, ovariectomy, and the use of the stomach-tube. A case of equine encephalomyelitis was presented for examination.

The cattle clinic included demonstrations of teat surgery, amputation of the claw, mastitis and its treatment, Cesarean section, and cyanide poisoning. The demonstration of cyanide

REPELLING A FOURTH UPPER MOLAR
Dr. J. P. Hutton at the microphone. Drs. E. R. Frank and F. M. Wilson operating.

poisoning was made possible by the administration of a large dose of cyanide. After the animal had exhibited symptoms of poisoning, it was treated with an intravenous solution of sodium thiosulfate, which overcame the toxemia so that the animal soon appeared normal again.

In the swine section, there were postmortem demonstrations for the purpose of differentiating swine erysipelas, hog cholera and enteritis. The operations included those for hernia and cryptorchidism, a Cesarean section, and the use of the stomach-tube for medication. In the sheep section, the animals were used for demonstrating how to diagnose internal parasitisms and administering treatment for them, docking, castration, and autopsies for differential diagnosis.

In the small-animal section, a large number of dogs and cats were presented for diagnostic and demonstration work. The demonstrations included anatomy of the cat, infectious enteritis through autopsies, restraint of cats, reduction of a prolapse of the rectum, a herniotomy, the removal of the crystalline lens from the eye of a dog, the draining of the ossa bulla, and many others. A Gad's heart demonstration was in charge of a staff from the Department of Physiology, Iowa State College.

In the section on poultry, the demonstrations included pullorum disease and tuberculin testing; technic of vaccinating for fowl-pox and laryngotracheitis; turkey diseases; grading market poultry, and the exhibit of live chicks which showed nutritional disturbances.

The pathological exhibit included over 600 specimens and illustrations. This large display was made possible by the U. S. Bureau of Animal Industry, the U. S. Bureau of Entomology and Plant Quarantine, Kansas State College, Colorado State College and the University of Nebraska.

The B. A. I. exhibit of fresh tissues included 55 specimens showing lesions of tuberculosis, 47 specimens of tumors, 54 other pathological conditions and 30 specimens showing parasitic infestation of various tissues. The preserved specimens consisted of 120 exhibits of 66 different parasites. Veterinary inspectors were in constant attendance to give information concerning the exhibits.

The U. S. Bureau of Entomology and Plant Quarantine exhibited 13 specimens of grubs, bots, ticks and flies, 16 photographs showing various stages and activities of the cattle grub, and 36 pictures in colors showing various forms of screw worm infestation in domestic as well as wild animals. A tanned hide was displayed to show the damage done by grubs.

The display from the University of Nebraska included 15 specimens of tuberculosis, ten tumors, 42 other pathological specimens from various animals, and 21 specimens of parasites from cattle, sheep, swine, horses, a mouse and a squirrel.

The Kansas State College displayed pictures of tumors and of strongylosis. Colorado State College exhibited twelve pictures and six maps pertaining to equine encephalomyelitis and its geographical distribution, 18 photographs of sheep parasite eggs and parasites, and 15 pictures showing various sheep diseases.

Of special note was a display made by a B. A. I. veterinary inspector, of 15 wax specimens in natural colors. The exhibit included a normal hog heart and specimens of 14 pathological conditions.

Much commendation is due the veterinarians who prepared and arranged this educational display, under the general direction of Dr. W. W. Lawson. Equal praise is due Dr. J. E. Weinman and those veterinarians who made the clinic possible.

THE LADIES' PROGRAM

The ladies who attend the A. V. M. A. meetings with any regularity find that each year has its own distinctive features. This year the unusually fine quality of the music seemed to stand

CESAREAN SECTION IN A COW

out above everything else. Listening to Madame Werndorf and her assistants was indeed a rare treat.

Of course, each part of the program had its own special appeal as well. As the ladies registered, each received a very attractive and useful souvenir.

The opening session was made especially enjoyable to us, because of Col. Foster's interesting address. The usual, rather technical President's address may be absorbing to the men, but often it is over the heads of mere wives. This year even we could appreciate that part of the program.

The Auxiliary breakfast on Wednesday morning gave us our first taste of Madame Werndorf. The harpist and violinist were very entertaining with their charming selection of numbers, but our greatest enjoyment and wonder came when five young ladies were introduced to play on five pianos. Trained and directed by Madame Werndorf, they played two beautiful numbers, while we all sat with rapt attention. Then, to add to our pleasure, we were told that one of the young ladies is the daughter of Dr. and Mrs. J. A. Lueth, of Council Bluffs, Iowa.

The luncheon at the Paxton on Thursday in its turn had its own special feature. On the walls of the dining-room were replicas of the A. V. M. A. emblem, each one studded and illuminated, and on either side of the room were displayed A. V. M. A. monograms in ice, each letter accentuated by a colored light. During the luncheon, a very attractive style show was staged, much to the enjoyment and interest of the guests.

For the Friday morning breakfast came more delicious food and more delightful music. As a finale, a charming message of appreciation and thanks to the local ladies was given by Mrs. C. H. Case, of Akron, Ohio, on behalf of the visiting group.

Again, we left an A. V. M. A. meeting with the feeling of having been most royally entertained, and some of us wondering how there had been achieved such a variety of delicious food and entertainment and yet of such universal appeal.

We hope it is not out of place for us to say here a word about the banquet speaker. We would like to express publicly our appreciation of a fine message, so ably presented by a charming gentleman and made doubly forceful by the unusual method used. Our thanks to Count Russo.

And now may we give our special acknowledgment to Dr. and Mrs. Drach and their able assistants for a splendid task splendidly performed. Three cheers for Omaha! We hope you will invite us again.

A. M. H.

Convention Notes

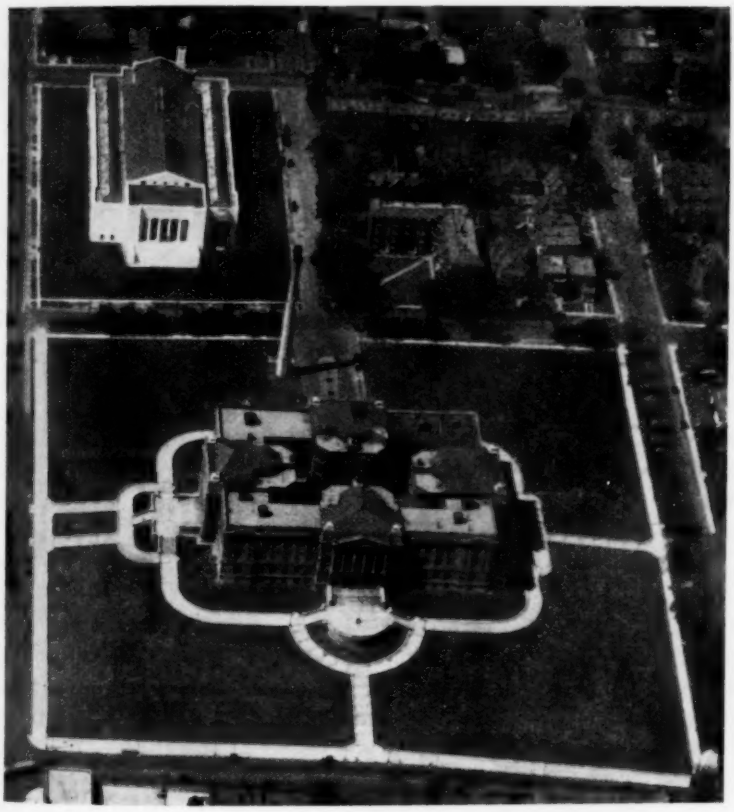
Dr. M. Jacob was elected to serve his twentieth term as treasurer of the A. V. M. A.

The National Society of Phi Zeta held its biennial meeting on Tuesday afternoon, August 17.

Thirteen classes, from 1887 to 1921, were represented at the Ontario Veterinary College alumni meeting.

The sessions of the House of Representatives were attended by delegates from 35 states and the District of Columbia.

The following past presidents were in attendance: Glover, Mohler, Cotton, Kinsley, Merillat, Sigler, Hall, Dykstra, Fitch, MacKellar and Flynn.



FOREGROUND, CENTRAL HIGH SCHOOL, OMAHA. BACKGROUND, JOSLYN MEMORIAL.

Veterinarians from 43 states, the District of Columbia and Canada were at the meeting. The five states not represented were Connecticut, Delaware, Maine, Montana and New Hampshire.

The Omaha Rotary Club arranged a special program, in charge of Dr. J. D. Ray, for the regular weekly meeting on Wednesday. Brief addresses were made by Treasurer Jacob and Secretary Hoskins.

The deans of seven of the veterinary colleges were at the convention: McAdory, of Alabama; Newsom, of Colorado; Murray, of Iowa; Dykstra, of Kansas; Brumley, of Ohio; Marsteller, of Texas; and Wegner, of Washington.

Among those in attendance were six members who were at the Omaha meeting in 1898: Dr. J. S. Anderson, of Lincoln, Neb.; Dr. C. E. Cotton, of Minneapolis, Minn.; Dr. J. I. Gibson, of Cedar Rapids, Iowa; Dr. Wm. Henry Kelly, of Albany, N. Y.; Dr. L. A. Merillat, of Chicago, Ill., and Dr. J. D. Sprague, of David City, Neb.

OUR NEW PRESIDENT

With the exception of one year spent in postgraduate work in Germany, Dr. Oscar Victor Brumley has been identified with teaching in the field of veterinary medicine at Ohio State University continuously since his graduation from that institution in 1897. Through the various ranks of fellow and assistant (1898-99), assistant (1899-1902), assistant professor (1902-04) and associate professor (1904-10), he rose to the rank of professor of veterinary surgery in 1910. From that date until 1929, he was Director of Veterinary Clinics, and from 1912 to 1929, he was secretary of the veterinary faculty. In 1929, he was made dean, succeeding Dr. David Stuart White.

Dr. Brumley was born in Leipsic, Ohio, on March 9, 1876. He attended public schools before entering Ohio State University. Since his graduation in 1897, he has been a citizen of Columbus, Ohio, and identified with various activities of that city. His interest in public health work was recognized in 1929, when he was elected a member of the Board of Health of Columbus. Two years later, he was elected president of the Board. Pressure of University duties compelled him to relinquish this post a short time later. Dr. Brumley is author of "Diseases of the Small Domestic Animals," now in its second edition.

OSCAR V. BRUMLEY, V. S.

President of the American Veterinary Medical Association, 1937-1938

The distinction of having been the first president-elect of the American Veterinary Medical Association will always belong to Dr. Brumley, this honor having been conferred upon him in Columbus, in 1936, during the 73rd annual meeting. Dr. Brumley joined the A. V. M. A. in 1919 and has served on some committee almost continuously ever since. Like so many of our presidents of recent years, he has had Executive Board experience. When Executive Board District 10 (Michigan and Ohio) was created in 1930, Dr. Brumley was elected to represent the new district and he was reëlected in 1935. He was a member (1920-21) and chairman (1926-27) of the Committee on Necrology; member (1924-26 and 1931-35) and chairman (1923-24) of the Special Committee on History; member (1927-28) of the Special Committee on Schmidt Memorial; member (1929-31) of the Special Committee on Distemper; member (1930-31) of the Committee on Resolutions and member (1933-34) of the Organizing Committee of the Twelfth International Veterinary Congress. During the seven years that Dr. Brumley has been a member of the Executive Board, he has served on numerous important committees of the Board.

Dr. Brumley is the third graduate of Ohio State University to become president of the A. V. M. A. and he is also the third president from the state of Ohio. At the present time the Buckeye State is the runner-up in A. V. M. A. membership standing, closely pressing California for the honor of having the largest number of members on the roll. These two states are the only ones credited with more than 300 members. It would not be surprising to see Ohio pass California during the year that Ohio has the presidency of the A. V. M. A. If this does not come to pass, it will not be due to any inactivity on the part of Dr. Brumley.

APPLICATIONS FOR MEMBERSHIP

The listing of 80 applications for membership this month brings the total for the year up to 530, just 30 more than the quota set by President Foster at the beginning of his administration. This number has been exceeded in only one year since the present method of handling applications has been in operation. The 530 applicants have been located in 45 states, the District of Columbia, the Canal Zone, Puerto Rico, the Philippines, Canada, Peru and Venezuela. Iowa contributed 84 to the total and Nebraska 40. California was third with 32 and New York was fourth with 30. Some of the smaller states made excep-

Meet—

DR. HELEN RICHT IRWIN

Secretary of the Section on Small Animals, 1937, the first woman veterinarian to hold an office in the A. V. M. A.

DR. E. A. RODIER

Addressed the Omaha convention on the topic "Organizing a Bureau of Animal Welfare for Kwangsi Province, Southwest China."

DR. R. P. MARSTELLER

Appointed dean of the School of Veterinary Medicine, Agricultural and Mechanical College of Texas.

DR. I. S. MCADORY

Appointed dean of the College of Veterinary Medicine, Alabama Polytechnic Institute.

tionally good showings, for example, South Carolina, with ten; Georgia, with seven; Idaho, with five, and Wyoming, with four.

This opportunity is taken to thank the resident state secretaries who rendered such material assistance in the membership campaign just closed. Many of the applications were obtained through their personal efforts. The same holds true of a number of members connected with veterinary supply houses, working in the territory around Omaha. These men accounted for a considerable number of the 180 applications credited to the states of Iowa, Nebraska, South Dakota, Minnesota, Kansas and Missouri. Thanks a lot to all who helped.

FIRST LISTING

(See July, 1937, JOURNAL)

ARNANDEZ, JULES L. 394 Angelus Pl., Memphis, Tenn.
D. V. M., Kansas State College, 1925
Vouchers: R. V. Rafnel and John H. Gillmann.

BJORGE, JOHN Black River Falls, Wis.
M. D. V., McKillip Veterinary College, 1909
Vouchers: James S. Healy and W. Wisnicky.

BLAIR, ALVIN H. Irwin, Iowa
D. V. M., Chicago Veterinary College, 1917
Vouchers: Amor C. Drach and R. L. South.

BOTWINICK, IRVING H. Woodbine, N. J.
V. M. D, University of Pennsylvania, 1937
Vouchers: A. Henry Craige, Jr., and C. J. Marshall.

BRASHIER, EARL S. Old Capitol, Jackson, Miss.
D. V. M., Chicago Veterinary College, 1913
Vouchers: Wm. L. Gates and O. M. Norton.

BRINEY, RUSSEL B. 1911 S. Newton St., Sioux City, Iowa
D. V. M., Kansas City Veterinary College, 1918
Vouchers: H. E. Breckerbaumer and John Pugh.

BROWN, LESTER H. Elkhorn, Neb.
D. V. M., Iowa State College, 1923
Vouchers: J. D. Ray and H. T. Corbet.

BRUNDRETT, FRANK W. 311 N. Windomere St., Dallas, Texas
D. V. M., Texas A. & M. College, 1937
Vouchers: E. W. Ramsey and T. O. Booth.

BURLINGAME, FLOYD A. Chesaning, Mich.
V. S., B. V. Sc. Ontario Veterinary College, 1914
Vouchers: E. E. Hamann and E. C. W. Schubel

CADY, GERALD W. Mason City, Iowa
D. V. M., Iowa State College, 1921
Vouchers: Joab P. Foster and Chas. Murray.

COPELAND, FRANK B. Logan, Iowa
D. V. M., Iowa State College, 1910
Vouchers: T. W. Munce and N. L. Nelson.

COPPLE, BERNARD I. 2212 Main St., Boise, Idaho
B. S., D. V. M, State College of Washington, 1931
Vouchers: J. D. Adams and J. E. Ellis.

COX, MARION T. South Main St., Kenton, Ohio
D. V. M., Ohio State University, 1936
Vouchers: W. F. Guard and Walter R. Hobbs.

COX, HERBERT, L. 226 Pondfield Rd., Bronxville, N. Y.
D. V. S., New York-American Veterinary College, 1907
Vouchers: Capt. Herbert M. Cox and R. S. MacKellar, Sr.

CUNDALL, RONALD L. Fairfax, Mo.
D. V. M., Colorado State College, 1930
Vouchers: Amor C. Drach and E. S. Harrison.

DAY, ROBERT W. Greenville, Tenn.
D. V. M., Ohio State University, 1934
Vouchers: M. Jacob and Robt. L. Hummer.

DOUDNA, DELBERT H. Tomahawk, Wis.
D. V. M., Ohio State University, 1936
Vouchers: C. B. Lord, D. L. Cox and James S. Healy.

FETHEROLF, WALTER C. Route 1, Wilmington, Del.
V. M. D., University of Pennsylvania, 1933
Vouchers: C. C. Palmer and R. M. Sarde.

FRANK, ARCHIE H. 609 Arundel Ave., College Park, Md.
D. V. M., Michigan State College, 1934
Vouchers: W. M. Mohler and A. D. MacDonald.

GALE, MARK E. 105 State Bldg., Phoenix, Ariz.
D. V. M., Kansas State College, 1936
Vouchers: Calvert T. Guilfoyle and Capt. Howard C. Gale.

GEFFERT, ALBERT L. Reedsburg, Miss.
V. S., B. V. Sc., Ontario Veterinary College, 1936
Vouchers: James S. Healy and W. Wisnicky.

GINGERY, JOHN B. 302 E. 2nd St., Muscatine, Iowa
D. V. M., Kansas State College, 1910
Vouchers: Harold E. Johnston and H. A. Seidell.

GRAHAM, L. MARSH Rolfe, Iowa
D. V. M., Chicago Veterinary College, 1917
Vouchers: Amor C. Drach and J. A. Lueth.

GREEN, JAMES C. 330 Federal Bldg., Madison, Wis.
D. V. M., Kansas City Veterinary College, 1918
Vouchers: James S. Healy and A. J. Knilans.

GREY, CHARLES G. Greyfolly, Olney, Md.
D. V. M., Michigan State College, 1933
Vouchers: W. M. Mohler and A. D. MacDonald.

GRIFFITH, BENJAMIN Wisner, Neb.
D. V. M., Kansas City Veterinary College, 1917
Vouchers: Frank Breed and Carl J. Norden.

GUBSER, NICOLAS E. Earlham, Iowa
M. D. C., Chicago Veterinary College, 1911
Vouchers: Paul L. Matthews and C. J. Scott.

HABERMANN, ROBERT T. 1300 Garfield, Lincoln, Neb.
B. S., Michigan State College, 1933
M. S., Michigan State College, 1935
D. V. M., Michigan State College, 1936
Vouchers: M. A. Latham and E. C. W. Schubel.

HAMILTON, LEWIS G. 511 3rd St., Belvidere, N. J.
D. V. M., Kansas State College, 1930
Vouchers: R. A. Hendershott and J. G. Hardenbergh.

HARWOOD, NATHAN D. Manhattan, Kan.
D. V. M., Kansas State College, 1918
Vouchers: J. H. Burt and Willet J. Price.

HAYES, SAMUEL E. Box 1, Hutchinson, Kan.
D. V. M., Grand Rapids Veterinary College, 1910
Vouchers: Edwin R. Bane and A. T. Kinsley.

HILL, HOWARD E. 926 Westend Pl., Knoxville, Tenn.
D. V. M., Alabama Polytechnic Institute, 1937
Vouchers: Robt. L. Hummer and M. Jacob.

IRVIN, KENNETH W. 330 Federal Bldg., Madison, Wis.
D. V. M., Iowa State College, 1934
Vouchers: James S. Healy and W. R. Winner.

LANTIS, CHARLES W. Coatsburg, Ill.
D. V. M., McKillip Veterinary College, 1918
Vouchers: Louis N. Morin and C. L. Campbell.

LARSEN, CARL E. Tilden, Neb.
D. V. M., Saint Joseph Veterinary College, 1919
Vouchers: J. D. Ray and S. S. Gibson.

LENHEIM, EDWARD H. 330 Federal Bldg., Madison, Wis.
D. V. M., Saint Joseph Veterinary College, 1916
Vouchers: James S. Healy and W. Wisnicky.

LIETZ, JESSE N. Eyota, Minn.
D. V. M., Kansas City Veterinary College, 1918
Vouchers: W. H. Whitcomb and Wm. F. Flanary.

LINDSAY, DAVID R. Conway Springs, Kan.
D. V. S., Kansas City Veterinary College, 1910
Vouchers: R. R. Dykstra and Chas. W. Bower.

MCCHESNEY, GERALD H. 330 Federal Bldg., Madison, Wis.
D. V. M., Alabama Polytechnic Institute, 1935
Vouchers: James S. Healy and H. E. Mullen.

MCWHERTER, ROBT. J. 662 N. Robertson Blvd., Los Angeles, Calif.
B. S., D. V. M, State College of Washington, 1929
Vouchers: W. L. Curtis and Jesse A. Jones

MARTIN, GEORGE E. 74 N. Girard St., Woodbury, N. J.
D. V. M., Kansas State College, 1924
Vouchers: R. A. Hendershott and H. M. O'Rear.

MEEKS, ROBERT B. 1806 Walker Ave., Kansas City, Kan.
D. V. M., Kansas City Veterinary College, 1913
Vouchers: H. W. Young and Chas. D. Folse.

MERENDA, JOSEPH J. 136 W. 53rd St., New York, N. Y.
D. V. M., Cornell University, 1934
Vouchers: C. P. Zepp and R. S. MacKellar, Sr.

MILLER, N. JAY 413 Cheyenne Ave., Eaton, Colo.
M. D. C., Chicago Veterinary College, 1908
Vouchers: I. E. Newsom and Frank Thorp, Jr.

MITCHELL, C. A. Box 313, Cheyenne, Wyo.
D. V. M., Kansas State College, 1936
Vouchers: B. R. McCrory and A. A. Hermann.

MOATS, ARTHUR E. 330 Federal Bldg., Madison, Wis.
D. V. M., Ohio State University, 1935
Vouchers: James S. Healy and W. R. Winner.

MONLUX, WILLIAM S. New York State Veterinary College, Ithaca, N. Y.
D. V. M., Iowa State College, 1937
Vouchers: W. A. Hagan and E. L. Brunett.

OLVEY, FRANK H. University of Missouri, Columbia, Mo.
D. V. M., Colorado State College, 1936
Vouchers: O. S. Crisler and Cecil Elder.

OSTERHOLTZ, WILLIAM F. 2014 J St., Omaha, Neb.
D. V. M., Kansas City Veterinary College, 1918
Vouchers: Harvey E. Smith and E. M. Clark.

PETERSON, ALLEN C. 114 S. 2nd Ave., Washington, Iowa
D. V. M., Iowa State College, 1932
Vouchers: H. D. Bergman and Chas. Murray.

PICKETT, CHARLES D. 225 N. 7th St., Kansas City, Kan.
D. V. M., Kansas State College, 1933
Vouchers: Lt. C. W. Rippetoe and E. A. Rippetoe.

PIERCE, CLEM Hubbard, Iowa
D. V. M., Iowa State College, 1925
Vouchers: I. J. Kleaveland and C. P. Fitch.

RASH, EDD E. 176 E. 2nd St., Fond du Lac, Wis.
D. V. M., Iowa State College, 1934
Vouchers: James S. Healy and W. R. Winner.

ROBERTS, OTIS R. Lewis, Iowa
D. V. M., Kansas City Veterinary College, 1917
Vouchers: J. A. Lueth and Amor C. Drach.

ROGERS, EDWIN K. 2423 Broadway, San Antonio, Texas
B. S., D. V. M., State College of Washington, 1916
Vouchers: Matthew E. Gleason and Chas. W. Neal.

ROSE, VILO T. Elkton, Ky.
D. V. M., Kansas State College, 1928
Vouchers: Joseph P. Scott and Frank Hare.

RUETER, GEORGE W. Box 231, Berthoud, Colo.
D. V. M., Colorado State College, 1923
Vouchers: I. E. Newsom and A. A. Hermann.

RYAN, JOHN J. Pocahontas, Iowa
D. V. M., Indiana Veterinary College, 1921
Vouchers: A. H. Quin, Jr., and H. C. Smith.

SCHUBEL, OTTO WM. 89 E. Chicago St., Quincy, Mich.
D. V. S., United States College of Veterinary Surgeons, 1911
Vouchers: J. C. Schwabland and E. C. W. Schubel.

SHOTT, KOURNIERS K. 217 8th Ave. N., Buhl, Idaho
D. V. M., Grand Rapids Veterinary College, 1917
Vouchers: W. A. Sullivan and H. R. Groome.

SIMS, OTTO L. Pleasantville, Ohio
D. V. M., Ohio State University, 1911
Vouchers: F. A. Zimmer and Jas. D. Grossman.

SMITH, JOHN C. Stuttgart, Ark.
D. V. M., Kansas State College, 1935
Vouchers: C. D. Stubbs and H. E. Curry.

SORDO, LUIS A. 4215 Connecticut Ave., N. W., Washington, D. C.
D. V. M., Alabama Polytechnic Institute, 1936
Vouchers: W. M. Mohler and J. R. Mohler.

STARNES, MERVYN B. City Health Dept., Dallas, Texas
D. V. M., Texas A. & M. College, 1927
Vouchers: L. I. Lucey and P. W. Burns.

STEPHENSON, ALFRED R. Bennett, Iowa
D. V. M., Iowa State College, 1918
Vouchers: Grant B. Munger and P. V. Neuzil.

SULLIVAN, J. L. 13476 Washington Blvd., Venice, Calif.
D. V. M., Colorado State College, 1933
Vouchers: W. L. Curtis and Eugene C. Jones.

TAYLOR, IRWIN Box 595, Odebolt, Iowa
D. V. M., Kansas City Veterinary College, 1918
Vouchers: T. W. Munce and N. L. Nelson.

THALLER, HOWARD I. 106 Maryland Ave., Hyattsville, Md.
D. V. M., Kansas State College, 1932
Vouchers: W. M. Mohler and A. D. MacDonald.

THAXTON, HUGH B. College Station, Texas
D. V. M., Texas A. & M. College, 1934
Vouchers: P. W. Burns and W. R. McCuistion.

TILL SAMUEL B. c/o Biltmore Dairy, Biltmore, N. C.
D. V. M., Alabama Polytechnic Institute, 1922
Vouchers: A. A. Husman and L. J. Faulhaber.

TODD, CAPT. G. HAROLD
Veterinary Station Hospital, Fort Snelling, Minn.
D. V. M., Iowa State College, 1933
Vouchers: Lt. Col. Jesse D. Derrick and Lt. L. W. Hibbs.

TURNER, C. LLOYD Animal Diseases Research Institute. Hull, Que.
V. S., B. V. Sc., Ontario Veterinary College, 1937
Vouchers: N. J. Holmes and Thomas Moore.

VANDERLOO, VIVIAN B. 1815 Asbury St., Dubuque, Iowa
D. V. M., Iowa State College, 1921
Vouchers: Grant B. Munger and T. W. Munce.

WALSH, JOHN T. Wymore, Neb.
D. V. M., Kansas City Veterinary College, 1918
Vouchers: W. T. Spencer and Frank Breed.

WILHITE, FRANK E. c/o Lincoln Hotel, Merrill, Wis.
D. V. M., Iowa State College, 1934
Vouchers: James S. Healy and W. Wisnicky.

WILLEY, LOUIS E. c/o Allied Laboratories, Inc., Sioux City, Iowa
D. V. M., Iowa State College, 1911
Vouchers: T. W. Munce and N. L. Nelson.

WILLIAMS, FRED E. Duncombe, Iowa
D. V. M., Saint Joseph Veterinary College, 1923
Vouchers: A. H. Quin, Jr., and T. W. Munce.

WILSON, FRANK B. Guthrie Center, Iowa
D. V. M., Colorado State College, 1915
Vouchers: Thos. W. Gidley and J. A. Lueth.

WILSON, LT. GEORGE M. 317 S. 6th St., Alhambra, Calif.
D. V. M., Iowa State College, 1937
Vouchers: B. H. Smith and W. L. Curtis.

WOOLSEY, JOHN H. Hamilton, Mo.
D. V. M., Saint Joseph Veterinary College, 1920
Vouchers: N. E. Howell and A. T. Kinsley.

Applications Pending

SECOND LISTING

(See August, 1937, JOURNAL)

Andersen, Andrew C. P., Centerville, Iowa.
Baker, Jack E., 717 Penrith Dr., Los Angeles, Calif.
Baldwin, Charles R., Fulton, N. Y.
Bradley, Alfred M., Alvord, Iowa.
Brown, William E., Ankeny, Iowa.
Cardona, Carlos J., Escuela Practica de Agricultura, Maracay, Venezuela.
Carpenter, Ernest R., Minnesota Lake, Minn.
Carter, Earl H., 203 Federal Bldg., South Omaha, Neb.
Corwin, Thomas E., 8701 80th St., Woodhaven, L. I., N. Y.
Crandall, James C., 163 Ulster Ave., Saugerties, N. Y.

Davidson, Graham R., Kansas City, Kan.
Dermody, Thomas A., Breda, Iowa.
Empey, William H., Battle Creek, Iowa.
Failing, George S., Winona, Minn.
Francesila, John R., 315 W. Lancaster Ave., Downingtown, Pa.
Frey, Charles J., 8109 Georgia Ave., Silver Spring, Md.
Frieze, Harry L., Gaffney, S. C.
Gibbons, James L., 1372 Market St., Chehalis, Wash.
Ginn, William, 409 State Office Bldg., Columbia, S. C.
Glascock, Dale Wm., Danbury, Iowa.
Haner, Frank H., Hensonville, N. Y.
Hayes, Winthrop L., Neola, Iowa.
Hein, Hubert R., Greenleaf, Kan.
Helms, Orland E., East Randolph, N. Y.
Hoffmann, Leonard F., 1131 E. Lincoln, Estherville, Iowa.
Horstman, Arthur W., 1741 W. Main Ave., Houston, Texas.
Hughes, Emory G., Sleepy Eye, Minn.
Hunt, Clarence E., 211 E. Monroe St., Mount Pleasant, Iowa.
Jacobs, O'Neal, Laurens, S. C.
Jacobs, Thomas Boyd, Newberry, S. C.
Jaggi, F. P., Texas A. & M. College, College Station, Texas.
Jennings, Michael T., Corning, Iowa.
Jensen, J. A., Marshalltown, Iowa.
Joehnk, Alfred H., 732 E. Jefferson St., Iowa City, Iowa.
Johnstone, James T., 309 Federal Bldg., Pierre, S. Dak.
Jones, George S., 409 State Office Bldg., Columbia, S. C.
Jorgensen, James P., Elkhorn, Iowa.
Kahle, Ernest C., Le Center, Minn.
Kaplus, Elliot, 787 Clinton Ave., Newark, N. J.
Kennedy, Charles E., 403 Saint Anthony St., Mobile, Ala.
Kitchen, Donald O., Greenville, S. C.
Knoop, Fred W., LeMars, Iowa.
Lawrence, Charles C., Manilla, Iowa.
Lindsey, Mark B, 1911 S. Main St., Santa Ana, Calif.
Majerus, Carl J., Falls City, Neb.
McCutchan, Howard E., Ayrshire, Iowa.
Moore, William M., Westmoreland Farm, Route 1, Cary, N. C.
Mottram, William E., 355 Fair Oaks St., San Francisco, Calif.
Nelson, Walter I., Herman, Neb.
Rainey, Paul A., Box 6123, West Palm Beach, Fla.
Rasmussen, Victor M., Sleepy Eye, Minn.
Reid, George F., 832 Washington St., Albany, Ore.
Resseguie, Roy A., Charter Oak, Iowa.
Scholty, W. C., Leon, Iowa.
Schwab, John T., 403 W. Wisconsin Ave., Oconomowoc, Wis.
Sharp, Floyd S., Ute, Iowa.
Shindell, Samuel H., 164 E. 71st St., New York, N. Y.
Sibert, Lt. Herbert F., Hdqrs. Missouri-Kansas CCC, Fort Leavenworth, Kan.
Sinnerud, Otto P., 10418 Vincennes Ave., Chicago, Ill.
Storey, Ensly R., Box 97, Albany, Ore.
Therkelsen, Frank W., Jeffers, Minn.
Thiele, Arthur R., 21-42—29th St., Astoria, N. Y.
Van Der Maaten, Martin, Alton, Iowa.
Van Tuyl, George E., Paullina, Iowa.
Vernon, John M., 636 Des Moines St., Des Moines, Iowa.
Weisheit, Henry C., Glenmont, N. Y.

The amount which should accompany an application filed this month is $6.67, which covers membership fee and dues to January 1, 1938, including subscription to the JOURNAL.

COMING VETERINARY MEETINGS

East Tennessee Veterinary Medical Society. White Surgical Supply Building, Knoxville, Tenn. September 4, 1937. Dr. Robert L. Hummer, Secretary, 312 W. Church Ave., Knoxville, Tenn.

Ak-Sar-Ben Veterinary Medical Association. Elks Building, Omaha, Neb. September 13, 1937. Dr. W. H. Riser, Secretary, Glenwood, Iowa.

San Diego County Veterinary Medical Association. San Diego, Calif. September 14, 1937. Dr. Donald E. Stover, Secretary, Zoological Research Bldg., Balboa Park, San Diego, Calif.

Southern California Veterinary Medical Association. Chamber of Commerce Building, Los Angeles, Calif. September 15, 1937. Dr. B. B. Coale, Secretary, 203 Administration Bldg., Union Stock Yards, Los Angeles, Calif.

Willamette Valley Veterinary Medical Association. Chamber of Commerce Rooms, Salem, Ore. September 15, 1937. Dr. Elwyn W. Coon, Secretary, Forest Grove, Ore.

Kansas City Veterinary Association. Auditorium, General Hospital No. 1 Annex, Kansas City, Mo. September 21, 1937. Dr. C. W. Schulz, Secretary, 800 Woodswether Rd., Kansas City, Mo.

Southwestern Minnesota Veterinary Medical Association. Luverne, Minn. September 21, 1937. Dr. Louis E. Stanton, Secretary, Jackson, Minn.

Veterinary Association of Saskatchewan. University of Saskatchewan, Saskatoon, Sask. October 1, 1937. Dr. Norman Wright, Secretary, 137 20th St. West, Saskatoon, Sask.

New Mexico Veterinary Medical Association. Albuquerque, N. M. October 1-2, 1937. Dr. T. I. Means, Secretary, Penn Rd., Santa Fe, N. M.

New England Veterinary Medical Association. Portland, Me. October 4-5, 1937. Dr. H. W. Jakeman, Secretary, 44 Bromfield St., Boston, Mass.

American Humane Association, The, Milwaukee, Wis. October 4-7, 1937. Mr. N. J. Walker, Secretary and General Manager, 80 Howard St., Albany, N. Y.

Southern California, Veterinary Hospital Association of. Los Angeles, Calif. October 5, 1937. Dr. L. B. Wolcott, Secretary, 1434 W. Slauson Ave., Los Angeles, Calif.

New York City, Veterinary Medical Association of. Hotel New Yorker, 8th Ave. and 34th St., New York, N. Y. October 6, 1937. Dr. J. B. Engle, Secretary, Box 432, Summit, N. J.

Saint Louis District Veterinary Medical Association. Melbourne Hotel, Saint Louis, Mo. October 6, 1937. Dr. Milton R. Fisher, Secretary, 3678 Dover Pl., Saint Louis, Mo.

Houston Veterinary Association. Houston, Texas. October 7, 1937. Dr. Claude Canion, Secretary, 409 Link Rd., Houston, Texas.

International Association of Milk Sanitarians. Brown Hotel, Louisville, Ky. October 11-13, 1937. Mr. C. Sidney Leete, Secretary, Department of Health, Albany, N. Y.

Chicago Veterinary Medical Association. Anti-Cruelty Society, 157 W. Grand Ave., Chicago, Ill. October 12, 1937. Dr. O. Norling-Christensen, Secretary, Box 12, Wilmette, Ill.

Eastern Iowa Veterinary Association, Inc. Cedar Rapids, Iowa. October 12-13, 1937. Dr. John J. Strandberg, Secretary, 1005 8th Ave., Belle Plaine, Iowa.

Southeastern Michigan Veterinary Medical Association. Detroit, Mich. October 13, 1937. Dr. F. D. Egan, Secretary, 17422 Woodward Ave., Detroit, Mich.

Southern States Veterinary Medical Association. Ansley Hotel, Atlanta, Ga. October 14-16, 1937. Dr. M. R. Blackstock, Secretary, 157 W. Hampton Ave., Spartanburg, S. C.

Purdue University Veterinary Short Course. Purdue University, Lafayette, Ind. October 19-22, 1937. Dr. R. A. Craig, Department of Veterinary Science, Purdue University, Lafayette, Ind.

Florida State Veterinary Medical Association and University of Florida Veterinary Short Course. Camp Roosevelt, Ocala, Fla. October 25-26, 1937. Dr. J. V. Knapp, Secretary, The Capitol, Tallahassee, Fla.

West Virginia Veterinary Medical Association. Fairmount Hotel, Fairmount, W. Va. October 25-26, 1937. Dr. J. H. Rietz, Secretary, Oglebay Hall, West Virginia University, Morgantown, W. Va.

Keystone Veterinary Medical Association. School of Veterinary Medicine, 39th St. and Woodland Ave., Philadelphia, Pa. October 27, 1937. Dr. M. W. Allam, Secretary, Media, Pa.

Massachusetts Veterinary Association. Hotel Westminster, Boston, Mass. October 27, 1937. Dr. H. W. Jakeman, Secretary, 44 Bromfield St., Boston, Mass.

ADDRESS OF THE PRESIDENT*

By COL. ROBERT J. FOSTER, *President*
American Veterinary Medical Association
Washington, D. C.

LADIES AND GENTLEMEN, MEMBERS OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION:

A year in the future seems without doubt much longer than a year in retrospect. A year in the life of a man or of an association is comparatively a very brief period. Few worth-while achievements can be worked out or perfected in such a short time. The attainment of programs or progress is based on continued activity and continuity of thought and purpose from year to year.

This convention marks the completion of the 74th year in the life of our organization. The Association has made a steady if not fast growth during these years. It has progressed as the science of our profession has advanced, until today we represent a profession abreast with the other branches of medical science and educationally on a par with all other branches of learning. Veterinary medicine today stands for a profession whose members may well feel proud.

HISTORY AND REORGANIZATION

Your President finds that his predecessors have thoroughly covered the history of veterinary medicine and the deeds of scientists who have contributed to its development. However, he will discuss contemporary history that has been made within the generation which he represents in the life of the Association.

A generation ago, our organization had no official organ or journal—no official headquarters or home—no paid or salaried officials—all were voluntary—the only physical evidence of the Association being its annual meetings and printed proceedings. It was a strictly amateur organization. The last half of our generation finds the Association with an official publication or journal, salaried and nonsalaried officials, and a home or headquarters. We have made marked progress during this period. No association has ever been served by a more loyal, thoroughgoing, and conscientious officer than our one and only Secretary-Editor, Dr. H. Preston Hoskins. However, we have grown in numbers, and the activities have outgrown our ability to handle them effi-

*Presented at the seventy-fourth annual meeting of the American Veterinary Medical Association, Omaha, Neb., August 16-20, 1937.

ciently. We cannot hope to meet the growing needs and demands being made by our members upon the Association headquarters with the present organization. We have developed to the point where it is entirely inadequate. We can expect very little further development unless we expand the present organization. This period may be termed the semi-professional period.

The Association is entering its 75th year—three-quarters of a century as an organization. It is in the strongest financial position in its history. The profession likewise is enjoying a period of prosperity. Our late President, Dr. John W. Adams, in his address at the 1926 convention, said:

> In every branch of our varied activities, in every field of our endeavor, there has been more to do at better compensation than ever before.

This is equally applicable today.

Your President, therefore, believes that the 75th year is a fitting time to inaugurate another period and that we should now be prepared to become a professional organization in every sense. The Association has outgrown the amateur and semiprofessional periods, if we are to keep in step with the progress of veterinary medicine. Such an organization is already provided by the constitution and by-laws. It remains only for this Association, through its Executive Board and House of Representatives, to put such a program into effect.

A complete official staff, as provided by the Constitution, should be organized this coming year. The JOURNAL must be revamped along policies demanded by our present membership, and our meetings must be reorganized in keeping with present-day methods. Such changes should improve our finances, attract new members, and make the Association more useful. These suggestions have been outlined in detail to your Executive Board and are along the lines your President has discussed at every veterinary meeting he has attended this past year.

EDUCATION

There are only ten veterinary colleges in the United States. These are all state institutions in agricultural colleges or state universities. Some of them are closely associated with the medical colleges. An Associated Press dispatch, dated July 14, 1937, quoting Prof. Harold F. Clark, in charge of educational economics at Teachers College, Columbia University, stated:

> Upsetting the oft-heard contention that the professions are overcrowded, Dr. Clark's advice to young men and women is to get into them. That's where the money is, he has concluded after an eight-year study of 16 selected occupations—medicine, law, dentis-

try, engineering, architecture, college teaching, social work, journalism, ministry, library work, public school teaching, skilled trades, nursing, unskilled labor, farming, and farm labor.

Fortunately, Dr. Clark left out the veterinary profession.

A recent survey shows that the freshman classes in our ten colleges average around 50 students. The individual colleges report that from two to six times that number apply yearly for admission, and that the students are selected on a basis of scholarship and adaptability. All colleges require at least one year of pre-veterinary college work and many students have two to four years of collegiate training before taking up the study of veterinary medicine. It is surprising and most gratifying to learn that at every one of our schools new buildings or equipment of various kinds is being added this year and facilities are being increased to meet the growing demands that scientific training requires. This shows that our veterinary colleges are trying to keep abreast of the March of Science. The result is a present-day graduate with an excellent academic training and a well-qualified veterinary education.

Medicine is the science which relates to the prevention, cure, or alleviation of disease. There are three recognized and legalized branches of medicine in our country—Doctors of Medicine, Doctors of Dental Surgery, and Doctors of Veterinary Medicine. Today most of the institutions of learning that confer these degrees are state institutions. This means that they are subsidized by public funds. While these three branches of medicine are based on common scientific study and practices in general, they are quite separate and apart in their fields of endeavor when it comes to practice; while in the field of public health the services are closely interrelated. Each branch conducts its own schools, and every state licenses the three branches as independent professions. The professions are not subservient to one another at any time during the schooling period or thereafter. There is no reason why the three branches of medical science should not coördinate their activities. With closer coöperation and coördination, better feeling and better results will be obtained, to the benefit of all concerned.

The veterinary profession's activities in public life are oftentimes found to be subordinated, not only to its detriment but to that of the work to be accomplished. Public officials and organizations—national, state, and municipal—are prone to utilize the services of veterinarians under descriptive headings, thereby entirely obliterating their professional standing, to the detriment of the veterinary profession. We should use every means at our

disposal to keep our professional identity known and try to prevent such practices on the part of public officials or organizations by insisting on proper titles identifying the professional service rendered.

Research

Veterinary medicine has not been overly favored with endowments with which to carry on extensive research. While other fields of medicine have been more generously favored with endowment funds, most veterinary research has been confined to the Bureau of Animal Industry, our veterinary colleges, veterinary departments of our state institutions, some research foundations, and commercial establishments. There is without doubt more justification for the expenditure of large sums of money for research relative to curative and preventive human medicine, but we must not lose sight of the fact that it might be just as profitable to conduct extensive research on prevention of animal diseases transmissible to man and thereby stop the spread of disease at its source. It would certainly prove an economical procedure and one that should be worthy of greater consideration by philanthropists who are interested in benefiting mankind.

Veterinary research problems are of great economic importance to owners and raisers of live stock, other animals, and poultry, as well as of vital importance to human health in the study of animal diseases transmissible to man. The work reported by R. E. Shope, M. D., of the Rockefeller Institute for Comparative Pathology, at Princeton, N. J., showing that the causative organisms of swine influenza and of influenza of humans are probably the same demonstrates the close relationship between animal and human diseases. The value of veterinary research cannot be overestimated.

Public Health

Rabies is a growing problem that seems to be challenging the medical profession for a solution in regard to its eradication. It would appear that the saying "What's everybody's business is nobody's business" is somewhat applicable in the handling of this disease in the United States. Veterinary medicine is the science which relates to the prevention, cure, or alleviation of disease in animals. Rabies is a disease of animals which is transmitted to man ordinarily by the bite of a rabid dog. It should follow, then, that the control and eradication of rabies in animals is certainly a veterinary problem in which all other agencies should coöperate.

Rabies could very properly be classified under the heading of an "interstate disease." It might well be placed under state veter-

inary supervision and coördinated through state, county, and municipal veterinary control. I know of no other animal disease that is transmitted to humans where the disease is subject to control and eradication by other professions or organizations than the veterinary profession. Why should an exception be made to rabies? The veterinary profession has demonstrated its ability to eradicate communicable or contagious diseases of animals, when those diseases have been of such economic importance as to warrant federal, state and local officials carrying out the regulatory measures required without fear or prejudice and without admixture of sentiment.

A system of state wide quarantine, isolation and vaccination of all dogs and cats would soon spell the doom to our rabies trouble. If the time arrives—and it surely will—when rabies constitutes a general public danger or menace, then maybe such measures will be put into effect and the disease will be controlled.

It was within the era of the present generation that this country was forced, by the scandals brought to light through the publication of a novel, to reorganize our federal meat inspection service under the Bureau of Animal Industry. There is still one very serious defect that it most deplorable from the standpoint of protection to human health. There is very little or no inspection or supervision over locally or farm-killed meats. There is no doubt but that many animals not fit to go to government-inspected slaughtering establishments are killed locally and diseased meat placed on the market, especially at so-called roadside or farmers' marketing places as well as at local stores in small communities. This is a situation that demands attention by state and local public health officials and governing agencies if it is considered essential to protect human health.

Human trichinosis is said to be more prevalent in this country than in any other. With improved diagnostic methods making it more easily recognizable in man, its eradication will be demanded. Swine trichinosis depends primarily on raw and undercooked pork scraps as found in garbage, table scraps, and swill being fed to swine. Human trichinosis depends upon eating raw or undercooked infested pork. The prevention of trichinosis in humans is a veterinary sanitary problem based upon animal management or feeding and careful veterinary postmortem inspection of swine carcasses.

Milk is probably the most important constituent of our daily diet. Milk inspection regulations prescribing how milk shall be produced and handled in the interest of providing clean, wholesome milk are written in state, county and municipal ordinances

"world without end." Stamps of approval on various milk products certifying or acknowledging that they are fit for human consumption are also in evidence.

Do all these laws, ordinances and approvals make for good milk in accordance with the recognized grades or standards? One thing they most certainly do and this is to permit beautifully labeled milk being sold to the household. I allude to this fact: Milk inspection is a recognized, nonprofessional, political activity in too many of our communities.

Milk is produced from animals—the dairy cow. You cannot have efficient milk inspection in this country unless milk production is under the sanitary supervision of the veterinary profession. The veterinarian is the only one educated and trained to recognize and diagnose diseased cattle. He is an animal diagnostician, an animal pathologist, an animal sanitarian. No one can take his place in the diagnosis, cure and treatment of sick animals. It stands to reason, therefore, that milk must be produced from healthy cows under sanitary conditions or else all the other widely publicized safeguards, such as pasteurization and sterilization, simply neutralize dirt-laden, germ-laden, disease-laden milk that is impossible of detection because of the milk's consistency and color. Whenever you find a modern, clean, sanitary dairy with a healthy herd, the owner always wants it known far and wide and invites inspection. You never hear of inspection invited where insanitary dairies are maintained.

I believe that what this country needs is another Upton Sinclair "Jungle" novel setting forth conditions of our meat and milk supply that are not under professional supervision. It might interest many people to know that dairy cattle affected with mastitis give milk containing blood and stringy pus and cattle with Bang's disease milk containing undulant fever germs, not to mention tubercule bacilli in milk from tuberculous cows.

Hence it is that the first principle for the production of good, wholesome meat or milk is that the product must come from healthy animals and then must be produced under sanitary conditions and handled under the same sanitary conditions until it reaches the consumer.

International Congress

The Thirteenth International Veterinary Congress will meet at Zurich and Interlaken, Switzerland, in August, 1938, and it is not too early to start your plans to attend this meeting. The official A. V. M. A. International Congress tour party, under the able direction of Dr. Adolph Eichhorn, will sail from New York

City on July 13 and return to New York City on September 15. This tour has been arranged with the particular idea of interesting veterinarians and their wives, and I urge all who can go to do so, and to make arrangements early.

It is a recognized and quite common practice of our federal government to give official recognition to and to defray the expenses to participating delegates to international congresses. This year the Organizing Committee of the Thirteenth International Veterinary Congress selected ten official delegates to present reports at the Congress in 1938. Four of these are in the federal service. The Swiss Government officially invited our government, through the State Department, to authorize official delegates to attend this coming Veterinary Congress. The Department of Agriculture recommended approval, while the War and Treasury Departments did not approve of the State Department's requesting an appropriation from Congress to defray the expenses of these ten official reporters. It would seem as if we must learn by experience. The next time it will probably be wise not to recommend any veterinarians in the War or Treasury Department as official delegates, for had all the interested departments approved of the request of your President to have the Department of State submit a bill to Congress to authorize an appropriation to defray the expenses of official delegates, it is very probable that the appropriation would have been obtained.

Relief

During the past year, our country was visited by one of the worst flood disasters in its entire history, and many of our association members in the flood-devastated area suffered severe losses. It was very gratifying to see how well the members of the Association contributed toward a relief fund in order that we could be of assistance to our own professional members at such a time.

World's Fair

Two World's Fairs will be held in 1939, one in New York City and one in San Francisco. The New York City World's Fair Association has designated a building to be known as the "Theater of Health" for the medical and public health exhibit. This building will contain approximately 81,000 square feet gross area and will cost in the neighborhood of $400,000. The proposed plan is to divide the building into three main halls—Hall of Man, Hall of Medical Science, and Hall of Public Health—and each hall into sections. Tentative exhibition ideas have been submitted by the Executive Committee of the Advisory Committee on Medicine and

Public Health, and our participation in this plan will require exhaustive study, planning, research, and very substantial financial backing if veterinary medical science is to be adequately represented.

Women's Auxiliary

No address would be complete without a word concerning the Women's Auxiliary. It is an important and growing organization with a serious and laudable purpose. Their President and officers have worked enthusiastically throughout the year to increase the membership and improve the usefulness of the Auxiliary. I want to take this opportunity on behalf of the members of the A. V. M. A. to express our grateful appreciation to the ladies for their contribution to the welfare of veterinary science.

The year has not passed without taking toll of many of our members whose passing we all mourn. I might mention our former President, Dr. N. F. Williams; a teacher and great public official, Dr. John H. McNeil; a noted practitioner and educator, Dr. E. L. Quitman; and that beloved pioneer and practitioner of South Carolina, Dr. Benjamin McInnes.

Commendations

It is a pleasure to pay tribute to the members of the Committee on Local Arrangements who have devoted so much thought, time and work to make this meeting the success that it will be. I want personally to thank Dr. W. T. Spencer and his entire committee for their efforts in our behalf.

Your President has had an exceptionally busy but most pleasant year. He has received the most loyal coöperation and assistance from each and every official and member of the Association with whom he has had the pleasure to come in contact.

Nothing new has been said here. My predecessors have for years past presented you with similar facts and fancies, probably not in the same form but with the same meaning. Maybe this year, the beginning of the three-quarters of a century mark, the time will be propitious for inaugurating a New Era.

"Time marches on." The 74th year is coming to a close, and its history is being recorded with this meeting. May the results be worth while.

The greatest efforts of the race have always been traceable to the love of praise, as its greatest catastrophes to the love of pleasure.—*John Ruskin.*

FOOD INSPECTION FOR THE CIVILIAN CONSERVATION CORPS*

By ROBERT FECHNER, *Washington, D. C.*
Director, Civilian Conservation Corps

It is with a feeling of deep gratitude for the part that some of the members of the American Veterinary Medical Association have played in safeguarding the health of the men of the Civilian Conservation Corps over the last four and a half years that I appear before you today. While I do not know all of you personally, I am well aware of how hard many of you have worked to provide pure, wholesome food to the hundreds of thousands of men who have gone into the CCC camps. I think that your association should be congratulated upon the fact that its members were ready on a moment's notice to take over the job of inspecting food for the camps. The fine health record of the Corps today indicates better than words how successfully Veterinary Reserve Officers have carried out their assignment.

I believe I am safe in saying that there are few people who do not know about the work which the Civilian Conservation Corps camps have accomplished in the way of tree planting, control of soil erosion, the development of recreational areas and the control of floods. It is also common knowledge, I think, that since 1933 the CCC has given employment to approximately two million people, most of them young men between the ages of 17 and 28 years of age.

I do not believe, however, that many people realize the painstaking care that has characterized the efforts of the federal government to build up the health of the boys, to safeguard them from accidents, and to make certain that the food served in the CCC camps is pure, wholesome and nourishing. It is this latter phase of the administration of the Civilian Conservation Corps that I plan to emphasize in my discussion today.

When the CCC was organized in 1933, it was made clear both in the President's message to Congress recommending the organization of the CCC and in the legislation enacted by Congress on March 31, 1933, that the objectives of the organization were twofold: first, to provide employment for needy young men whose families were in need of financial aid and who were not able to find employment for themselves; second, to conserve and improve our great fund of natural resources.

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While it was appreciated by the President and his advisers that no difficulty was to be expected in obtaining sufficient men to fill the CCC camps or in finding sufficient conservation projects in the forests and fields to keep a forestry army of three or four hundred thousand men busy, it was realized by everyone that the establishment and operation of the CCC presented tremendous problems in planning, organization and supply.

It was decided to give the job of administering and operating the camps to the War Department, for that Department was well equipped to do that particular job. It had the organization, trained personnel, and initial equipment necessary to induct these men into the CCC, to give them a complete physical examination, weed out the physically unfit, protect enrollées from disease with preventive inoculations, transport them to selected camps, clothe, feed, shelter and supply them with medical care and to arrange for their pay. The experience and training of Regular and Reserve Officers of the Army also fitted them to exert the necessary degree of disciplinary control.

Because of the wide experience which the Department of Agriculture and the Department of the Interior had gained from their administration of the nation's forests, parks and other public lands, the job of recommending work programs and supervising the work was placed in their hands. The Labor Department was made responsible for selecting all men for enrollment in the Corps, except war veterans and local experienced men.

The President realized that, while existing departments could administer the camps and handle work programs, it was necessary to set up a central organization which would coördinate and guide the activities of the departments entrusted with the various phases of administering the Corps. That is where I entered the CCC picture.

Called to Service

I was at Plainfield, New Jersey, when I first learned that I was to have part in this great movement. Since I was unable, at that time, to go to Washington to discuss the matter, Mr. Louis McHenry Howe, then secretary to the President, said he would come and talk with me. In our conference, he told me that the President wished to discuss the possibility of my appointment as Director of the new organization. I hesitated to accept, because of my inexperience with the type of work to be done as well as my reluctance to give up the work in which I had been engaged practically my entire lifetime. I agreed, however, to discuss the matter with the President.

When I met President Roosevelt at the White House, a few days later, he presented his ideas about this proposed program in such an interesting way that I no longer hesitated. I have never regretted my decision to accept the appointment, for I have never been connected with any work that has brought more personal pleasure and satisfaction than has this effort to help a great army of unemployed young men. It has also been a great source of satisfaction to me to note the progress the CCC has made in repairing the disastrous effects of wasteful use of our great natural resources.

On April 7, 1933, the first men were enrolled in the CCC by the War Department. In April 17, just twelve days after the CCC was launched, the first work camp was established in the George Washington National Forest. By early July, the Corps was in full operation.

At the outset of the Civilian Conservation Corps, eligibility requirements were established limiting enrollments to those unemployed, single men between the ages of 18 and 25, whose families were in need of public assistance. Under the new law, the age limits have been changed to 17 and 23, and the relief requirement lifted. All enrollées arrange, when they are enrolled, to send a minimum of $22 home or to deposit this amount monthly with the Chief of Finance of the United States Army, who is our fiscal officer. This arrangement leaves the young men $8 a month to spend on themselves.

With the exception of the 40 hours a week when the boys are engaged in conservation projects in the field, the enrollées are under the direction of the United States Army. Reserve officers have charge of the camps. They have immediate responsibility over the welfare and discipline of the enrollées and the operation of the camps. It is a part of their job to purchase supplies of fresh foods and vegetables for the use of the camp. Purchasing of staple foods and other supplies for the CCC is handled by the Quartermaster Corps of the U. S. Army.

Two Million Men in Camp

Over the last four years, we have had close to two million young men and war veterans in the CCC camps. We started out with an enrollment of 300,000. In 1935, the enrolled strength of the Corps was raised to a peak of 506,000 men. At the present time, under the legislation passed in late June, the enrolled strength of the CCC is fixed at 300,000 men. At its highest strength the CCC had 2,652 camps in operation. Under the act

enacted June 28, 1937, extending the life of the Corps for three years, we will gradually reduce the number of camps to 1,500.

Many of the young men enrolled in the CCC came to the Corps broken in spirit and undernourished in body, at the very time in their lives when the curve of physical development and the desire to advance should be in its ascendency rather than remaining static or dropping to lower levels. Recognizing the fact that healthy minds are more frequently associated with healthy bodies, we have, from the beginning, directed our attention toward the improvement of the physical condition of enrollées. Proper environment, reasonable work or exercise and, above all, plenty of sound, wholesome and palatable food makes toward healthy bodies. That we are dealing with young men, who should be actively developing physically, made it all the more imperative that stress be placed on the question of proper diet.

A Food Problem

Supplying the thousands of camps scattered throughout the length and breadth of the land with food and other essentials presented the War Department with quite a different problem from the procurement of supplies for the Regular Army stations. The Regular Army posts and camps are located relatively near urban centers, where adequate supplies of food are readily available that may be promptly transported by truck or rail direct to the point of use. Contrast with this the problem of supplying ice and fresh and perishable foods to the CCC camp which, in the less densely populated areas, may be 50 to 75 miles from the nearest railroad point, which may be a community smaller in population than the CCC camp. In such cases the perishable foods frequently have to be shipped in by rail for considerable distances and then moved to the camp by truck. Restricted markets and long hauls of supplies are often the rule rather than the exception. However, these difficulties of food supply have been surmounted by careful methods of purchase, inspection and transportation, and the CCC company, building roads in the mountain fastness of a national forest, is as well fed and has the same abundant variety of fresh and wholesome foods as the CCC company working on the public parks almost in the shadow of the Washington Monument.

Garrison Ration Adopted

When we were first confronted with the problem of providing adequate and wholesome rations for a great army of undernourished and hardworking youths, it was decided, after careful and

exhaustive study, that the Army "garrison ration," with its authorized substitutive items, would, with but slight alterations, supply an adequate, balanced and economical diet for the men of the Corps. A ration is the amount of food necessary to nourish properly one person for one day. The army garrison ration consists of specified quantities of 39 food items ranging from fresh beef to spices. The amount of each item prescribed is such that the complete ration furnishes a proper balance of the various kinds of food. It must not be inferred that the enrollée is limited to these 39 food items and must eat this combination of foods day after day. On the contrary he has nearly as wide a variety of food as the market will permit. The ration is prescribed as a basis for determining the monetary value of the food to be consumed per man per day. This ration cost is determined each month by computing, from the contract prices, the total cost of the prescribed 39 items in any particular district.

Contracts are awarded monthly to the lowest responsible bidder. The average ration cost during the past year has been about 47 cents plus per day. When the ration cost is determined, the money allowance may be used to purchase either the ration items or their equivalent of any of a wide range of authorized substitutive food items. Obviously the money value of the ration will vary in different parts of the country directly with food costs in the locality considered. This method of determining ration costs assures that enrollées from all camps are fed equally well whether the cost of food be high or low in the particular part of the country concerned.

Quality a Determining Factor

So far I have not mentioned quality, but quality is naturally a determining factor in making food purchases. The CCC ration allowance is based not only upon definite quantities of the various ration items, but upon a specified quality of each. Specifications based on the regular federal specifications code have been set up governing each ration item, which must be met by the contractor selling foodstuffs to the CCC if the contract is to be filled.

Quality as called for in purchase contracts is dependent upon proper inspection at time of purchase. It is apparent that the quality of meals served in the CCC is in a very large measure based on the efficiency of the food inspection service.

Exclusive of ice and packaging, each enrollée requires slightly in excess of five pounds of food daily. Of this amount there are approximately two pounds of foods of animal origin; that is, meats, poultry, fish and dairy products. These foods represent

but 40 per cent of the weight of the ration but account for between 60 and 70 per cent of the total cost and even a higher percentage of the food value. It is hardly necessary to say that these expensive foods of animal origin are the most perishable and the most difficult to judge for quality, and that good quality and wholesomeness can be assured only by competent and careful inspection at the time of purchase and prior to consumption.

Careful Inspection Insures Quality

Everyone can realize that practically all foods are graded. This is illustrated by the prices you see, let us say, for oranges, which may range from 20 to 50 cents a dozen; similarly different brands of butter are marked with different prices; it is all butter, but the price should reflect the quality or grade. Price alone cannot always be accepted as the criterion of quality, hence the necessity of inspection. The thrifty housewife, in the purchase of her daily food, shops from store to store in search of the proper combination of quality and price, realizing that she is spending the major portion of her household budget. *This* is inspection. The same principle that applies to the family purchase applies equally to the purchases for the hundreds of thousands in the CCC. Caveat emptor—let the buyer beware—is the rule to be followed. Careful inspection is the only means of assuring quality.

It might be well to mention here that I have been informed that the nationally recognized firms bidding on these contracts very heartily approve of the veterinary inspection service with reference to specification requirements. The better the inspection service functions the better assurance all bidders have that a uniform quality will be required from all contractors.

It is an unfortunate fact of nature that our most nutritious and palatable foods—the foods of animal origin—are also excellent foods for the microörganisms causing spoilage and those that transmit disease. These foods, such as meat and milk, may harbor microörganisms that will cause disease without any visible evidence of the danger that lurks within and so the necessity of the professional inspection of food animals prior to and at time of slaughter and the determination of the sanitary conditions incident to the production and marketing of dairy products. Certainly in the field of sanitary inspection of foods of animal origin the veterinarian stands preëminent and by virtue of his professional training should also be fitted to become the most competent in general quality inspection. All foods of animal origin for the CCC, as well as for the Army, receive the most

careful inspection for both sanitary condition and quality by qualified veterinary officer inspectors.

B. A. I. Emergency Inspection

Army regulations governing the rationing of the Regular Army stipulate that meat purchased in the United States shall come from animals slaughtered under the inspection of the Bureau of Animal Industry of the Department of Agriculture. It was my desire to have the same regulations apply to meat purchases for the CCC but this was found to be impracticable. The isolated locations of many of the camps made it necessary to purchase fresh meat, if such purchases were made, from plants where the slaughtering was not inspected by the Bureau of Animal Industry as a part of its regular work.

In areas where Bureau of Animal Industry inspection was not practicable, there were, usually, local slaughtering establishments operating under state or city inspection or without any inspection. These plants supplied the needs of local residents. At my request, the Bureau of Animal Industry modified and expanded its service so as to install what was known as "emergency inspection" in certain of these selected plants so that we could go ahead and purchase from them meat for the CCC. I was as anxious as anyone to aid local industries by purchasing meat from these local plants where good quality meat was available but I had to make certain that the health of the young men entrusted to us was safeguarded.

This plan served to meet the immediate emergency but it was soon apparent that it placed too great a burden upon the inspecting force of the Bureau, thus interfering with the performance of its regular duties. Furthermore, even though the Bureau of Animal Industry inspected the slaughtering of animals, it was not prepared to make the proper inspections for quality or to see that meat products were handled in a sanitary manner after being purchased for CCC consumption. After a careful study of the CCC meat problem, arrangements were made to have the Veterinary Corps of the United States Army assume responsibility for inspecting all food products of animal origin used by the Civilian Conservation Corps. Under this arrangement our policy has been to purchase meat, wherever possible, from plants which the Bureau of Animal Industry inspects as a part of its regular work. The Bureau, however, dropped the "emergency inspection" work at local slaughtering plants which it had been conducting for this office and this duty was taken over by the Army Veterinary Service.

Reserve Officers on Active Duty

In order to carry out its new meat inspection duties, the War Department has called to active duty such Veterinary Reserve Officers as have been needed for the conduct of this work. There are at present between 110 and 115 Veterinary Reserve Officers on duty with the CCC under the supervision of the Veterinary Corps of the Army. They inspect all food products of animal origin for compliance with the provisions of the various federal specifications which define the quality and grade of these products, and also for sanitary conditions at time of receipt. They inspect the sanitary conditions of markets or other places in which such foods are handled prior to purchase.

It has been found necessary for Veterinary Reserve Officers to continue to conduct some slaughter inspection in those plants in which "emergency inspection" was inaugurated under the Bureau of Animal Industry, but it has been demonstrated that this inspection could be materially reduced. During 1936, only about 7 per cent of the meat purchased for the CCC came from these emergency inspection plants. The remaining 93 per cent was purchased from establishments where the animals were slaughtered under the direct supervision of the Bureau of Animal Industry. It is believed that the amount of slaughter inspection by the Army veterinary inspectors will be considerably reduced this year.

I have been informed that it is not the desire of the Veterinary Corps to duplicate in any way any recognized sanitary inspection agency. Its purpose is to begin at the point where other approved sanitary inspection agencies cease and to assure that the same excellent sanitary principles of shipment, handling and storage are maintained from that point until the moment of consumption by the CCC.

The Veterinary Corps is also charged with the inspection of foods of animal origin to determine that they comply with the terms of the contract governing the purchase which is in turn based upon the quality requirements provided in federal specifications. This inspection is no doubt as important as the sanitary inspection and results in much greater amounts of food being rejected. If, for example, the terms of a purchase contract specify that medium grade of steer beef be supplied, it is obviously highly important to be certain that a common grade of cow beef is not delivered. To accept the lower grade would not only result in a direct monetary loss to the government, but the

dietetic value received would be considerably diminished, and a less palatable and desirable food would be served.

A Few Figures

Most of us are accustomed to think in terms of the food requirement of our individual families and for that reason find it difficult to grasp the magnitude of the job of purchase inspection for an organization the size of the CCC. A few simple figures may help to clarify the picture. At the present authorized maximum strength, the CCC requires the inspection and purchase of over one and one-half million pounds of food each day. For this *daily* menu—

300 medium-sized steers
800 hogs
88 tons of fresh milk
19 tons of butter
13 tons of shortening
1,000 cases of eggs
2 tons of cheese

are required. This mentions only the animal products received. Among many of the other items needed are 3,000 bushels of potatoes and 20 tons of coffee.

On Thanksgiving Day and Christmas Day the ration allowance is varied, and a special allowance of 28 ounces of turkey per man is made. This means that the CCC requires on each of these feast days about 276 tons of turkey, or over 40,000 individual birds.

The Veterinary Reserve Officer inspector must be able to inspect animal carcasses for diseased conditions when called upon at emergency inspection plants. He must also be able to grade fresh carcasses and wholesale cuts of beef, pork, mutton and lamb; smoked meats, such as bacon, ham, and sausages of all kinds; poultry; eggs; and dairy products, such as butter, cheese, ice cream, etc.

Country Divided Into Districts

Considering that there are nearly 2,000 camps scattered over the entire country, it can be readily understood that it would not be feasible for veterinary officers to be stationed at each camp and so inspect the products only upon receipt at the camps. On the average, each veterinarian inspects for 15 to 20 companies or for approximately 3,000 men. To accomplish their work, at least one officer is assigned to each CCC district, a definite geographical area so designated for supply and admin-

istrative purposes. The inspector makes his inspections chiefly at the plants of contractors in the market center or centers within his assigned district. The inspections made are mainly for camps within his own district; however, he frequently makes inspections of products that are to be shipped to camps in districts adjacent to his own.

At the time of inspection and acceptance at the contractor's place of business, the accepted products are indelibly stamped to indicate the inspection. The inspection at this time is for both compliance with the terms of the contract as to grade and sanitary condition, but as most contracts require camp delivery by the contractor, it is incumbent upon him to deliver the product to the camp without loss of sanitary condition. Veterinary inspectors visit each camp at irregular intervals to ascertain that these products are delivered in a sanitary condition and that only properly stamped products are received. This system of inspection has proven to be most satisfactory.

Fresh Milk Presents Problem

Fresh milk is one of the very perishable products and a food in which sanitary supervision of its production and marketing is absolutely essential if we are to prevent the introduction of serious diseases, of both animal and human origin, which may be transmitted through an insanitary supply. There are no important grading factors of milk quality other than those based on sanitation. Fresh milk is not shipped long distances, and it has been necessary to develop a safe local milk supply for the CCC where such a supply did not exist—and such conditions were all too common. The veterinary inspector in each CCC district inspects and maintains sanitary supervision of all supplying dairies and milk plants within his district, and purchases are limited to those which can meet the exacting requirements of the sanitary regulations of the Army for a safe milk supply.

Pasteurized milk, Grade A, is purchased wherever procurable. But very, very little raw milk is purchased, and this from only the best of sources. It is hoped that we may soon limit purchases to pasteurized milk—to make assurance doubly sure. The problem of a sanitary and safe milk supply has been one more or less peculiar to the CCC in many districts, and it is my firm conviction that in this respect the Veterinary Corps has done more to carry the gospel of milk sanitation to rural communities—where it was most needed—than has any other single agency at any time. An indelible impression has been made of which the profession may well be proud.

As may be expected, the canned meats are prepared chiefly in the larger packing centers, where they are inspected by Regular or Reserve Veterinary Officers for quality and sanitary condition of ingredients during the process of preparation and prior to acceptance and forwarding through the usual channels of military and CCC supply distribution.

Laboratory Examinations Made

In addition to the inspections possible in the field, the Reserve veterinarians upon occasion forward samples to the central laboratories of the Medical Department where chemical and bacteriological examinations are made. This laboratory adjunct has proven especially valuable in the examination of canned and fresh milk and certain other canned foods and prepared meat foods.

So successful has the Veterinary Service proven itself in the field of sanitation and quality grading of foods of animal origin that in many areas the district commanders have requested that its activities be extended to include the inspection of other foods, and the inspection of fresh and canned fruits and vegetables and other items, such as bread, is being conducted in these areas.

The value of veterinary sanitary and quality grading inspection cannot be wholly measured in dollars and cents. No monetary value can be placed on the direct or indirect improvement of physical welfare, the prevention of human disease and suffering, or the preservation of human life. There can be no question but that proper sanitary inspection accomplishes these ends. We can, however, estimate quite accurately the savings to the government made by quality grading inspection on the basis of the difference between the contract prices and the actual market values of the products rejected as being below the grade specified and which would have been accepted in the absence of inspection. Insanitary or unsound products would, if accepted, be a complete loss to the government, and rejections made for these reasons can be computed as savings at the full contract price.

One Million Dollars Saved

During 1936, the CCC with an average enrollment of about 341,000, spent approximately 58,000,000 dollars for food. Sixty-five per cent of this amount, or about 38,000,000 dollars, was spent for foods of animal origin which were inspected by the Veterinary Service. Official inspection reports show that during this year 8.7 per cent of the total amount of all foods of animal origin were rejected because of low quality and 0.6 per cent be-

cause of being diseased or insanitary. On the basis of a saving of four cents per pound for rejections because of low quality and the contract price for rejections because of diseased or insanitary reasons, the total savings resulting from veterinary inspection were nearly a million dollars ($984,245.78). The actual cost of this inspection, including the salaries of inspectors and traveling expenses, was less than one-half million dollars, leaving net savings of one-half million dollars. Not evaluating the all-important item of disease prevention, the veterinary inspection service is a profitable, sound business investment which pays 100 per cent dividends.

I might state in another way that the cost of inspecting these perishable and semi-perishable foods is about 1⅓ per cent of the cost of the food. This can be considered a good economic practice.

That the vital duty of food inspection has been and is being well accomplished is evidenced by the fact that since this veterinary inspection service has been established, there has not been a single serious outbreak of disease in the CCC which could in any way be attributed to poor or contaminated foods of animal origin. Further, the average enrollée has shown an average gain in weight of about seven pounds during the first two months of enrollment and has left the CCC at the end of his enrollment period a stronger, healthier, and better man.

The CCC recognizes and appreciates the contribution of the veterinarian to this project of national rehabilitation, and the veterinary profession may well feel proud.

Another Famous Horse

In a recent number of the *Farm Journal*, a story of Single G was published. This famous race horse is now 27 years old. On his annual trip to Purdue University, recently, a long tooth had to be nipped off. When Single G retired from the Grand Circuit in 1926, he had won 262 heats out of 431 contested races—a record not even approached by any pacer or trotter. In 13 seasons, he won almost $105,000.

Count that day lost whose low descending sun
Views from thy hand no worthy action done.

—*Anon.*

GREATER ACHIEVEMENT THROUGH CLOSER COOPERATION*

By JOHN R. MOHLER, *Washington, D. C.*
Chief, Bureau of Animal Industry
United States Department of Agriculture

It is always pleasant to be among friends, especially when there is a bond of common interest. As we meet from year to year to consider problems and appraise progress, I look upon these conferences as the physical embodiment of coöperation. Coming from every part of the United States and Canada, we plan and work together, and through sound counsel we later achieve results far beyond what could have been attained through individual or unorganized effort.

I see increasing evidence that the flair for organization that, in recent years, has marked veterinary initiative is distinctly beneficial to the individual member as well as to the group. One successful activity leads to another and the American public is keen in appraising the value of meritorious work. Thus, with public approval and support, the prestige of the veterinary profession of this country has grown. All this should be a personal satisfaction to every member of our Association.

But I find still greater satisfaction in knowing that this work has become a dominant influence in agriculture, industry, and human welfare throughout the United States.

Still another source of satisfaction is the knowledge that good business methods have prevailed. Through sound organization the cost of veterinary service is small in proportion to the benefits derived. The expenses of federal meat inspection, for instance, does not exceed seven cents per animal. Notwithstanding the well-known thoroughness of the work, that figure includes not only the actual inspection, but supervision of processing, laboratory tests, and general administration. Field work, of course, costs more because of the greater element of travel and the far-flung character of our live stock industry. But here again the expense is more than repaid by practical benefits that pyramid themselves as time goes on.

I sometimes wonder whether there is not a logical connection between nationality of that illustrious veterinarian, Dr. Gamgee, and the great coöperative work he began. Dr. Gamgee, as you will recall, was largely responsible for organizing the First International Veterinary Congress, and he was of that remarkably

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canny and thrifty race, the Scotch. Briefly, coöperation within our profession has not only fostered progress, but has done so with economy and businesslike efficiency.

Bearing these general observations in mind, let us now approach the more definite topic, "Greater Achievement Through Closer Coöperation." Especially at this time of year we might find greater satisfaction, I admit, in basking in the sun of past achievement. The spirit of this convention, I realize also, is one of relaxation and fellowship. Those are further reasons why I wish to talk about closer coöperation. With it we can accomplish still more with approximately the same effort and cost. And because natural laws are universal, we find in the scientific profession, as well as in mechanics, that the same energy will produce more useful work when there is a decrease in resistance or friction.

Pasteur Discredited

Let us now analyze coöperative tendencies from a scientific point of view. Let us even consider it as a case history. Intellectual pioneers have rarely had an easy time. One might infer that such a scientist as Pasteur would promptly have commanded the admiration of his colleagues in the scientific world. On the contrary, his contemporaries did much to discredit both him and his work. Until rather recently a few individuals, or at least a small minority, have led the majority in scientific thinking and action. In the veterinary profession today we are fortunate in finding a much more advanced situation in this respect. The great majority of veterinarians are conspicuously open-minded and progressive. Only a small number have played a dissenting rôle.

In the formative stages of plans for work there must of necessity be independent thought and discussion pro and con. But after the best ideas have been selected, combined, and translated into a course of action, good coöperators then unite to advance the common cause. And here I pay tribute to all who have given this type of loyal support.

It may be of interest now to consider a few definite instances in which veterinary pioneers have failed to obtain the degree of support to which their work was justly entitled.

In the case of tick eradication the classical findings of Smith, Kilborne and Curtice provided the basic knowledge necessary for a field campaign against cattle ticks. The scientific evidence was ample and convincing, yet there was far from 100 per cent coöperation in putting this knowledge into effect in a practical way. I am confident that there would have been less opposition from

cattle owners and some public officials and that lives and property would have been saved had there been a greater coöperation in the early days of tick eradication.

Weakness of the Human "Backbone"

I recognize in this audience a considerable number of veterinarians who have participated in eradicating outbreaks of foot-and-mouth disease. As most of us are aware, there were many dark and anxious days when success hung in the balance. I have in mind particularly the time during the California outbreak, in 1924-25, when wild deer became infected, thereby threatening to spread the infection throughout the entire Rocky Mountain area from the Mexican to the Canadian border. At that time it became necessary to relieve from duty certain well-qualified employés merely because they had no confidence in the success of the work. When they considered the continuance of the campaign futile, their value in it ceased. Bear in mind also that in the campaigns against foot-and-mouth disease employés were carefully picked as far as possible. But even then this perplexing problem of incomplete coöperation arose. To aggravate the situation, many cases of faintheartedness developed among certain officials whose coöperation was greatly needed. As a result the eradication forces had to deal with weakness of the human "backbone" as well as with the virus of foot-and-mouth disease.

In tuberculosis eradication the support of a large majority has carried this vast campaign forward to assured success. Yet there have been noticeable examples of doubt, indifference, and even opposition by persons whose hearty coöperation would have been extremely valuable. Essentially the same condition now applies to some phases of the newer campaign against Bang's disease. And the reason I have broached this general topic is the prospect that the same type of skepticism or opposition is likely to be encountered in the future.

The reasons why a condition of this kind exists are, of course, outside the realm of veterinary science. They are essentially psychological and philosophical. From recent conversations with persons qualified to analyze problems of this character, I have obtained some rather interesting views. Most human beings possess coöperative traits to a degree comparable with the herding instinct of many lower animals. In animals this tendency appears to be inherited to a degree noticeable in breed characteristics. It is well known that breeds of fine-wool sheep, such as the Rambouillet, possess the herding instinct in greater degree than the mutton breeds, such as the Shropshire.

A Classical Example

Possibly also, as a result of heredity, certain persons have only a weak coöperative tendency and others appear to lack it almost entirely. By this tendency I mean the desire to work with, or at least go along with, the great majority. A lack of this quality may be seen in the highly independent sort of person of whom the hermit is an extreme example. This condition has been noted for many centuries. In ancient Rome, when the conspirators were plotting the assassination of Julius Caesar, they were at first undecided whether to ask the great Roman orator Cicero to join them. He was personally hostile to Caesar, but the conspirators finally decided not to ask his coöperation because of his known independent attitude. In Shakespeare's account of the plot, Brutus declared, referring to Cicero,

> Oh, name him not . . . for he will never follow anything that other men begin.

From this classical example one may readily observe that even centuries ago the trait of thinking and working alone was sometimes stronger than the coöperative tendency.

Besides the anti-herding instinct, if we may use that term, another explanation of the reason for lack of coöperation is the fear of failure. Many persons dignify this fear by gentler terms, such as caution and conservatism. But basically, there is a lurking fear of loss of prestige or of criticism or ridicule from one's fellow man. A person of this type is sometimes designated a defeatist, meaning one who fears defeat. In the vernacular, he is beaten before he starts. Hence he refuses to start.

Four Elements of Effective Cooperation

In veterinary field work, the type of coöperation that I deem especially desirable has these qualities:

It is intelligent, recognizing the professional soundness of the project.

It is public spirited, subordinating self-interest to the common good.

It is courageous, signifying a willingness to carry on even against odds.

It is optimistic, having full confidence in ultimate success.

This four-square kind of coöperation is responsible for most of the progress made in recent years.

But along with willingness to work with others, one must expect also to find conspicuous cases of individualism. It is not unusual to observe persons who endorse coöperative principles in the abstract, but who fail to lend support when their help is actu-

ally needed. With all sincerity they feel that the time for action should be unduly deferred. They take this position with full knowledge that a much larger number of well-informed veterinarians consider that the time is ripe.

I am not advising or even suggesting any important step for which there is lack of thorough and adequate research and other proper foundation. To attempt field work under such conditions would be both unwise and unworthy of veterinary traditions. But there comes a time when we must make a choice, on the one hand, between permitting live stock losses to continue and, on the other, attempting to combat them by new procedures that we confidently know to be sound and fully adequate. It is both proper and highly commendable to prove scientific facts over and over, but when this has been done, unwillingness to apply such knowledge in a practical way is synonymous with passive opposition.

On several previous occasions I have discussed some of these observations with individuals and small groups. I now approach a point that seems especially applicable to large regional and national enterprises in which this Association is so vitally interested.

Proper Attitude Toward Opposition

Even in professional bodies, where one naturally expects to find the scientific outlook a dominant influence, we are scarcely justified in assuming that this is always the case. Even a thorough scientific training does not necessarily overshadow inherent negative tendencies. This characteristic is recognized in the Freudian concept of psychology as negativ-istic. As a result persons who are unwilling to coöperate may interfere materially with work of the group at large, not only retarding progress but also increasing the cost.

We must reckon with this human tendency that has existed for years in the past and will continue, in all probability, for generations to come. In a democracy such as ours, where the right of free speech prevails and where the value of criticism is widely appreciated, drastic methods of suppressing opposition are inappropriate. In some countries, especially in the past, persons who adopted an antisocial position soon lost their lives or at least were imprisoned. But in this more modern era of free speech even a powerful majority must submit to criticism and learn to "take it," even though it may be distasteful.

Granting that we must always expect some opposition, what is the best means of dealing with it? The best course, in my opinion, is to study it impersonally and analytically, and then turn it to the best possible account. Sometimes criticism contains valuable

points which may be developed with profit to our undertakings. A certain minister of the gospel was once asked whether he accepted, for his church, contributions from persons who had made their money in a questionable manner. He replied that he would gladly take money even from the devil and use it for the glory of the Lord. Or we may consider the analogy of the forester who fights a threatening fire with a backfire. Or, in our own field, we have the case of the practitioner who combats infections with autogenous bacterins. So in numerous ways resourceful veterinarians may turn opposition to great account.

The constitutional right of free speech and the similar right of freedom of the press can be used by the sponsors of worthy enterprises as well as by the opponents. And when the sponsors are in the majority, their influence, if well directed, can do vastly more good than the influence of the minority may do harm. The critic must usually content himself with a mere fragment of truth, but the coöperating workers who have nothing to distort can present all the facts and give them wide distribution by press and radio with powerful effect.

In connection with this discussion, a point that merits attention by administrative officers is the selection of employés with progressive outlooks. Collegiate records and high examination ratings are naturally important, but we may also wisely look for evidence of open-mindedness, the courage to go forward against odds, and well-developed coöperative qualities. In this connection the forms now used for rating the efficiency of employés of the Department of Agriculture include rather prominently the evidence of coöperative tendencies. Incidentally, similar qualities, including open-mindedness, mental courage, and an optimistic outlook, merit attention in the selection of officers and committee members of professional associations.

I might amplify the foregoing remarks with many examples that have come to my attention, but I prefer to have you consider them merely from an entirely impersonal point of view. I conclude with the hope that these observations may prove helpful in connection with future work and enable us to gather even a greater harvest of results through still more effective coöperation.

Apology

In the photograph, "Hostesses at Omaha," which appeared on page 130 of the August issue of the JOURNAL, an error was made in identifying one of the ladies. In the back row (standing) the first lady is Mrs. G. H. Leenerts, of Humphrey, Neb., and not Mrs. L. F. Nisley. Our apology to both ladies.

ORGANIZING A BUREAU OF ANIMAL WELFARE FOR KWANGSI PROVINCE, SOUTHWEST CHINA*

By E. A. RODIER, *Pullman, Wash.*

Much has been written relative to the chaotic condition and apparent helplessness of the Chinese Republic, but little has been said about the far-sighted program of political, economic, educational and cultural rehabilitation that has been inaugurated and the results that have been achieved during the past few years during which time it was the writer's privilege and pleasure to serve the Kwangsi Provincial Government as Technical Adviser in the field of animal welfare. The purpose of this article is to acquaint the American veterinarian with the trials and tribulations of a fellow worker who in May, 1933, went into the interior of southwest China to establish a modern system of mass animal disease control and animal improvement. The reader is privileged to form his own opinion as to the degree of success attained by this pioneer adventure.

KWANGSI GEOGRAPHICALLY

The Republic of China covers such a vast territory that unless one has traveled extensively in the "Land of the Rising Sun," it would be difficult to visualize just where the province of Kwangsi is located and the extent of territory within its borders.

Reference to the map shows that Kwangsi is the center one of the three provinces bordering on French Indo-China. Its area is 220,000 square miles, of which only 8.64 per cent, or approximately 20,000 square miles, is arable land. For this reason, it is called the "Mountainous Country" by the Chinese and no wonder, for the province is entirely surrounded by mountains, with so many ranges and peaks within its borders that it would be difficult to travel ten miles in any direction without climbing a mountain pass or using a small river boat, called a "sampan." However, some very beautiful mountain scenery can be seen in this province, particularly in the northwest, known as the Kweilein district.

The climate of Kwangsi is semi-tropical and characterized by its high degree of humidity, being 95 per cent or more during the larger part of the year. The summers are hot. The winters, which last about two months, are cold; the temperature really

*Presented at the seventy-fourth annual meeting of the American Veterinary Medical Association, Omaha, Neb., August 16-20, 1937.

reaches the freezing point but the weather seems much colder due to the high humidity.

A large part of the arable land in Kwangsi is of the marginal variety, the best producing soil being located in the little valleys along the rivers and brooks. The principal agricultural product is rice, the total production of which was 62,000,000 piculs in 1933. Other products are potatoes, 18,000,000 piculs; corn, 5,800,000 piculs; soybean, 1,300,000 piculs; sugar-cane, 6,700,000 piculs; tobacco, 140,000 piculs; and flax, 740,000 piculs. Cattle are raised on the foothills on land not found suitable for raising agricultural products. The 1933 census of Kwangsi live stock showed 2,300,000 head of horses, cattle and water buffalo, of which about 25,000 might be said to be superior individuals, with the balance in a badly degenerated condition. The population of Kwangsi (1933 census, 13,000,000 people) is congested in the northeastern, eastern and southern parts of the province. Every family keeps a few small animals, the total mounting to 10,000,000 hogs, 18,000,000 chickens and 7,000,000 ducks. There is very much uncultivated land in Kwangsi. Since 1933, attention has been directed to the need of more evenly spreading the population, and of water irrigation, both of which has a bearing on animal disease control and animal improvement problems.

Communication Systems

Communication has been and still is very difficult, although great improvement has been made in that respect during the last few years. That is one of the marks of a modern government, for it may be stated as a fundamental principle that one of the yardsticks by which the progressiveness of a country may be measured is the development of its systems of communication, for improvement in agriculture, in which pursuit more than 80 per cent of the people are engaged, in business and even in culture must be in direct ratio to the improvement in its means of communication with the outside world.

Within the last few years, approximately 3,000 miles of motor roads have been built, with Nanning (near the center of the province) as the center of the system. These highways, on which 500 government-operated motor cars and buses operate daily on regular schedule, reach nearly every part of the province and connect it with neighboring provinces and with French Indo-China on the south. This transportation system played and is still playing an important part in prompt suppression of communicable animal diseases. That is one of the principal reasons why Nanning was selected as the site for the headquarters and laboratory of the Bureau of Animal Industry.

Waterways, posts, telegraph and telephone are also important means of communication. During the last few years, a Bureau of Navigation, established by the Government, has provided regular service on navigable rivers. At the present time, there are 44 post offices serving the principal towns in Kwangsi. Telephone and telegraph offices number 50, and 3,000 miles of wires connect the principal centers of population and the outside world.

The one waterway from the China Sea into Kwangsi is the West River and its branches. A British company operates 5,000-ton steamers from Hong Kong to a place called Wuchow, where the West River branches, a two-day trip. From there on to Nanning, one travels on a river boat that looks something like a small edition of a Mississippi "show boat," but having a single deck and considerably less than 1,000 tons in size. How long the trip from Wuchow to Nanning takes, depends entirely upon the season of the year. If the water is high, it can be done in two or three days. If the water is low, it may take two or three weeks!

A Foreigner Embarks

The first time a foreigner who does not speak the Chinese language goes up the river, he is in for an experience he will never forget! That experience begins right at the dock in Hong Kong, for in order to board his steamer, he must climb over the freight with which the dock is littered and pick his way through a crowd of Chinese coolies busily engaged in loading the boat to the accompanying two-toned "sing-song" that is characteristic of every Chinese engaged in hard labor. Having survived the unfamiliar smell of Chinese chickens, hogs, and dried fish, at last he finds himself safely aboard. As soon as the boat leaves the dock, he finds that the first-class compartment is entirely surrounded by a stout iron grill, the door locked and two husky, turbaned Indian Sikes armed with rifles are pacing the deck! Conversation with the British captain soon convinces him that the Sikes are not there to provde "atmosphere," either, for banditry is not uncommon in this part of the world. And one never knows where it will originate. More often than not, it comes from a group of third-class passengers on the boat, for unless other craft keep at a healthy distance, the Sikes do not hesitate to open fire!

Arriving at Wuchow, one transfers to the small river steamer, that is, provided someone has met him who speaks Chinese. Otherwise, he is just "out of luck!" No question about that, for the moment the boat docks in Wuchow, a delegation of Chinese police demand passports and insist that they be accompanied to local

police headquarters for registration, even if leaving within the hour. And they want to know who he is, what his business is, where he is going and why, and if not, why so? Once on the small boat, the fun begins in earnest, for this is a Chinese boat now, captain, crew and passengers. Unless one has an interpreter along, the situation can only be described as "unfortunate."

The first time the writer made the trip to Nanning at the invitation of the Kwangsi government, he was met at Wuchow and accompanied to Nanning and return, but at the time when he was proceeding to Nanning accompanied by his wife, babe in arms, and all his wordly possessions, there had been no provision made for an interpreter to accompany the party. That was a different story entirely! However, he did manage to reach Nan-

FIG. 1. Laboratory, school and executive offices of the Bureau of Animal Welfare, Kwangsi Provincial Government, Southwest China, organized in 1933 and completed in 1936.

ning and find lodgings, even though the boat arrived in the middle of the night! Since that time, the writer and his family have frequently used the air service, which has since ben established.

KWANGSI POLITICALLY AND ECONOMICALLY

The four curses of Kwangsi, as of China, are disorder, poverty, ignorance and defenselessness. The aim of the present administration (which to all intents and purposes is a military dictatorship acting independent of the Nanking Government) is to rout out these four evils. To establish order, the governmental organization has been improved, military and administrative powers have been concentrated and the people taught an orderly mode of living and thought. In order that they may not be defenseless, the people have been organized into the "People's Militia" for

military training. To combat ignorance, the government popularizes education and promotes cultural activities. To abolish poverty, which is the primary cause of disorder, the Kwangsi leaders have embarked upon a policy of mineral development, intense industrialization and animal disease control, animal and agricultural improvement.

All these efforts, to be effective, must be and are made through the fundamental unit of Chinese society, which is the family. The village clan is, therefore, the basic unit by means of which the Government carries out its policies. And here is the most difficult of all reconstruction problems, because for more than 2,000 years the village patriarch has been "judge and jury" in his village. To replace him with a modern-trained man, who will coöperate in carrying out modern policies necessary to effective reconstruction without starting a riot, has required a strong will and the ultimate of Oriental diplomacy. Nevertheless, when the writer left China, a little better than 40 per cent of the villages were headed by modern-trained men.

The life of Kwangsi people has always been hard. New industries cannot compete with foreign enterprises and home handicraft work is only leading a tortured existence in the interior. Commercially, both the productive power and purchasing power of Chinese agricultural villages are at a low ebb and business is very poor. As to mineral resources, although they are rich, the native method of exploiting them produces but little. More than 80 per cent of the population of Kwangsi is dependent upon agriculture for a living. In the past, agricultural technic was antiquated and production decreased instead of increased, so agricultural and forest stations have been established to help the farmers to improve the quality and quantity of their agricultural products by introducing modern methods.

Why the Bureau of Animal Welfare Was Established

The yardstick by which prosperity is gauged is the family yearly income, which determines buying power. The answer to the problem of increasing the buying power of the masses of Chinese people must therefore be sought in ways and means to prevent loss and to increase the family yearly income of the large majority of families, who are farmers, absolutely dependent for their livelihood upon the welfare of their live stock, particularly their work animals. In this agricultural country, it is therefore the farmers' animals which are the one most important factor that determines the annual income of the vast majority of the

people, the merchants as well as the farmers, for the welfare of the merchant is dependent upon the farmers' welfare.

Stopping losses from animal diseases, particularly preventing the death of work animals, immediately raises buying power. Improved methods of growing more and better animals increase it. Concentrating effort on the one most important factor makes it possible to train men to do this one thing well. Having a force of men trained to work directly with the farmer is the secret of positive results.

The animal disease protection service extended to the farmers by the Bureau of Animal Welfare does not cost the farmer any-

FIG. 2. Rear view of Bureau of Animal Welfare, Kwangsi Provincial Government, Southwest China, showing auxiliary buildings. Located about 180 miles north of French Indo-China frontier and 600 miles west of Hong Kong.

thing except his time and labor. The methods used to improve his live stock are within his understanding and means. Therefore the policy is a practical one. The revenue indirectly received by the Government more than justifies the cost.

Health and strength are not only desirable from a civil standpoint, but absolutely necessary from a military standpoint. Teaching the increased use of animal products and how to prevent human beings from becoming infected with animal diseases, particularly the internal parasites which take such a great toll of life and health, is an important factor in increasing productivity.

The Bureau of Animal Welfare policy lends itself to ready coöperation with all other government organizations engaged in bettering the condition of the farmers.

HISTORY OF THE BUREAU OF ANIMAL WELFARE

It was known for many years that one of the principal reasons for farmer poverty was the heavy financial loss which was suffered every year because communicable diseases killed so many

domestic animals, but not until 1933, when the first Kwangsi Year Book was published, did the leaders realize that animal diseases alone accounted for an economic loss of more than $2,000,000.00 per year. Nor until it was brought to their attention did they realize that modern methods of breeding, feeding, care and management could easily increase the value of the farmers' live stock by another $2,000,000.00 within a few years, providing communicable animal diseases were brought under effective control. These were the principal reasons why the leaders accepted the plan of organization outlined to them, appropriated $250,000.00 (Mexican) for the first year and gave the writer *carte blanche* to go ahead.

The First Year

Three problems presented themselves simultaneously for immediate action: preparation of plans and selection of laboratory site, organization of a school for training live stock inspector assistants, and the selection of a "model county" where effective animal disease control could be demonstrated before the end of the first year, so that appropriation of the second year's budget would be assured. The Chinese simply cannot understand why it should take several years for a proposition of this kind to get under way. One just does not get any more money to work with, and that's that! And so vigorous action, and plenty of it, was the "order of the day."

Designing the laboratory, school, and executive offices and ordering machinery and equipment for the new Bureau of Animal Welfare presented no difficulties, for fortunately the writer had just had six years of experience with the Philippine Insular Government which had presented a similar problem in laboratory construction that he had satisfactorily solved. Fortunately again, the Kwangsi Bureau of Public Works had an excellent Chinese architect who made very satisfactory blue prints and specification for the new Bureau from sketches submitted to him. Selection of a suitable site presented a little more difficulty because much of the territory surrounding Nanning is under water during the flood period of the year. Then again, it was advisable to locate on one of the main arteries of travel, not too far from the Government executive center.

A suitable site was located on the top of a knoll, about two miles from Nanning, on the mail road to the north. However, as this only suitable site was a graveyard, public notice had to be given to the populace to remove the urns containing the earthly remains of their relatives. That required two months, after which it took 50 coolies some three months to level off the four

acres of ground before construction could be begun. Brick kilns are plentiful in this part of China and brick is cheap. Therefore brick was selected as the building material, faced with cement plaster, the cement being imported from Hong Kong. The first contract let was for the central unit of the main building. A native Chinese contractor was employed to do the work. By the end of the first year, this unit was practically completed and the equipment received.

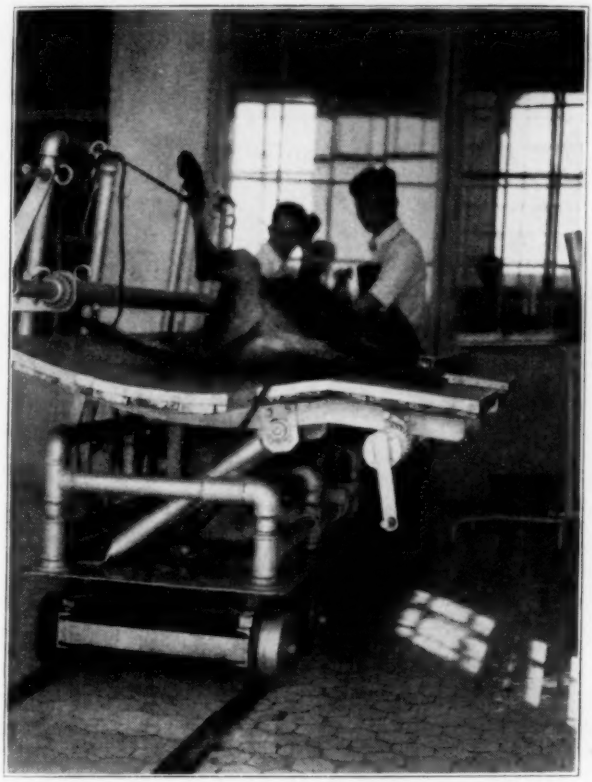

FIG. 3. Preparation room, rinderpest vaccine laboratory, Bureau of Animal Welfare, Kwangsi Provincial Government.

No time was lost in establishing a school for training live stock inspectors. A set of old, unused buildings was obtained for class, laboratory and dormitory room sufficiently large to accommodate fifty students. Local carpenters made the necessary school, dormitory, and dining furniture. At the same time, blackboards and laboratory equipment were ordered from Shanghai, Hong

Kong and Manila. Two four-year trained Filipino veterinarians were secured to write out daily lessons for the six-month course in pathology, bacteriology, infectious diseases of animals, animal husbandry, and preventive medicine outlined by the writer, with two Chinese translators obtained from Hong Kong to translate these lessons into the Chinese language, which was necessary because the students, although graduates of the local high school, did not have a knowledge of English.

The laboratory work was given by a Filipino veterinarian with the aid of an interpreter. Chinese-English medical dictionaries were obtained through a former professor in the Chinese medical school at Canton. After check by the writer, these lessons were given a week in advance to older men who acted as instructors, who in turn gave the lessons to the students according to schedule after they had memorized them. As far as known to the writer, this is the first time that modern veterinary medical knowledge has been translated to the Chinese language. One hundred students were selected from the local high schools. This class was immediately divided into two equal sections, one taking the school work while the other acted as assistants to a Filipino veterinarian secured as Field Veterinarian in the field, the two classes alternating every two months. That is, the field men were brought back to the school and those in school were sent out to the field. The entire expenses of the year's training (totaling six months at the school and six months in the field) were paid from the school budget.

Having arranged the school curriculum in such a manner that 50 students were immediately available as assistants to the field veterinarian, a "model county" (known in Chinese as a "Hsien") containing approximately 50,000 cattle and water buffalo, was selected as a demonstration area. Animal disease control work was confined to that district, using quarantine alone during the first year. Rinderpest was the only infectious disease of importance with which we had to deal. Since main roads do not pass through the villages, which are located on either side of them and are surrounded by walls outside of which the animals graze only during the day, it is surprising how effective quarantine alone can be when it is continuously applied. Anyhow, the results were good enough so that the writer had no difficulty in securing his second year's budget.

The Second Year

Early in the year, the central unit of the main building was completed and equipped and experiments begun on the prepara-

tion of rinderpest vaccine, using a native strain of virus isolated from a "hot" case of uncomplicated rinderpest located not far from the laboratory. The experiments having been successful, quantity production was begun the latter part of the second year, using a Filipino veterinarian as superintendent of production,

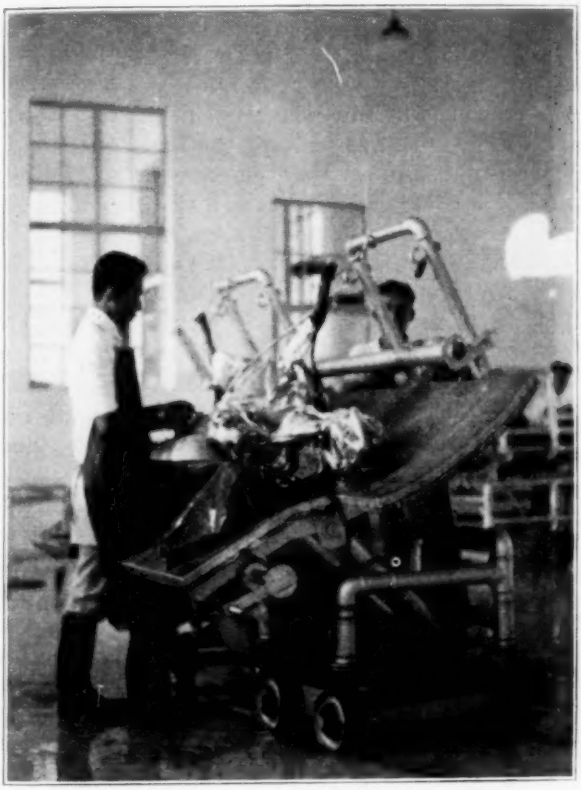

FIG. 4. Operation room, rinderpest vaccine laboratory, Bureau of Animal Welfare, Kwangsi Provincial Government, showing native Chinese trained to do this work.

and ten "hand-picked" graduates of the first live stock inspector training class as his assistants. By the end of the year, 2,000 doses of rinderpest vaccine and 10 liters of reactor serum had been produced. And just in time, for these biologics were needed to give the Governor such a convincing demonstration that the third year's budget would be provided.

Building construction went ahead at full speed during the second year. The two T-head wings were added to the central unit of the main building, one equipped for class and laboratory rooms

for students and the other for diagnostic, research and executive office rooms. A new dormitory building also was completed by the end of the second year, as well as the auxiliary buildings, which included a water tower, an electric power house and storage building, a steam-sterilizing building, garage, and temporary cattle sheds. Since sufficient water for cooling the ammonia coils of the refrigeration machines and labuse could not be obtained from wells, it was necessary to pipe water from the river, two miles away.

One of the reasons why Mo Ming Hsien (county) was selected as a demonstration area was because the Magistrate was one of few who spoke English and it was therefore possible to deal with him without the use of an interpreter. Another reason was because he was young, enthusiastic and eager to coöperate. And besides, Mo Ming was the headquarters for the district bandit-suppression army troops.

Being now ready for mass vaccination, the Mo Ming District Magistrate was requested to advise the writer by telephone when the next outbreak of rinderpest appeared in any of the villages under his jurisdiction. This he did, but at the same time gave the disturbing information that the headman of the village had informed him that difficulty would be experienced in carrying out vaccination, if it could be done at all, for two trouble-makers had circulated among the village people, telling them that we were going to stick needles into their animals and kill them all. The villagers therefore threatened armed resistance if vaccination were attempted.

So what? Elementary, my dear Watson. Upon being informed that the District Magistrate would wait for him in Mo Ming, the writer had a vaccinating outfit with plenty of rinderpest serum and vaccine placed in his car and, accompanied by his interpreter and body-guards, promptly proceeded to Mo Ming. Arriving at the District Magistrate's office, instructions were given to telephone to the infected village announcing that the vaccination program was being called off, so as to throw the people off their guard and thus prevent the villagers from taking their animals out of the village.

Accompanied by the Magistrate, we then called at the military Commandant's office and presented our problem to the Vice-Commandant, who, at the writer's suggestion, readily consented to send two companies of soldiers to the place and have it placed under martial law and the trouble-makers arrested before daybreak the next morning. This was done according to plan. When the farmers found that they were overpowered and their

leaders under arrest, they showed no fight but readily brought their cattle and water buffalo to the vaccinating center, where all apparently well animals showing normal temperatures were vaccinated and the owners given vaccination tags entitling them to take these animals outside the wall for grazing purposes in se-

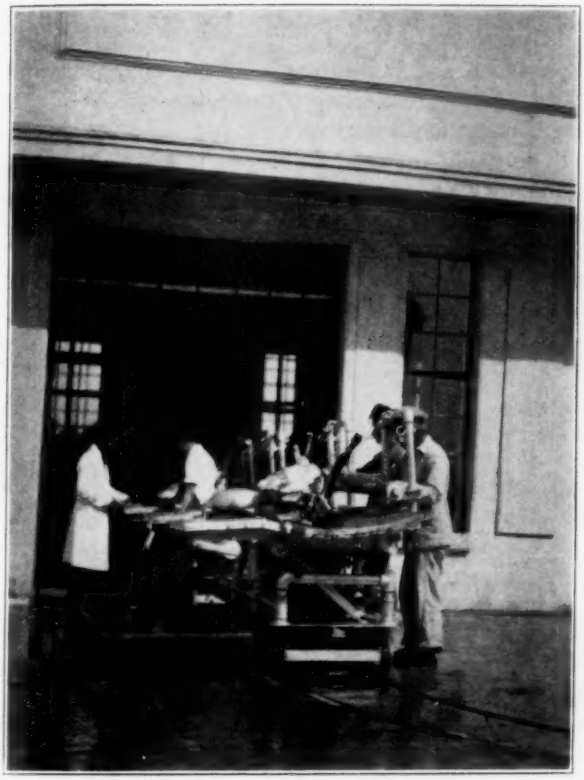

FIG. 5. Postmortem and disposal of carcasses, rinderpest vaccine laboratory, Bureau of Animal Welfare, Kwangsi Provincial Government.

lected areas. Guards counted heads morning and night, for no animal was permitted to leave the village until the quarantine was raised. Five animals were found showing high temperatures. These were given liberal injections of reactor serum and placed in a quarantine corral with 24-hour guard until they recovered. Fifteen days after the recovery of the last case, quarantine was lifted, as no new cases had developed in the meantime.

Here was a village that had been considered a permanent focus of rinderpest infection. As long back as the oldest inhabitants

could remember, 30 per cent or more of their large animals had died of this dreaded disease every year. This year they lost not even one after the Bureau of Animal Welfare took charge of the situation, so they decided that "the white man's medicine" was real magic! Needless to say, there was no difficulty in securing approval of the third year's budget.

The Third Year

With the school and laboratory running smoothly and disease control effective in the "demonstration county," the writer turned his attention to animal improvement and coöperation with other government entities engaged in improving the condition of the common man.

Animal disease control is but one phase of a rural welfare program based on animal welfare. Equally important is the question of finding a practical way to "make two pounds of animal flesh grow where but one grew before." The problem here involved may be stated under three headings: (1) Breeds and Breeding, (2) Feeds and Feeding, and (3) Care and Management.

As in all parts of the Orient, here in southwest China, we find that since time immemorial it has been the practice of live stock owners to allow their animals to breed indiscriminately, selling their best animals and keeping the poorer ones for breeding purposes, for only the good animals bring a satisfactory price and besides, the Oriental farmer is fully convinced that any male that can perform the breeding act is good enough for a sire. And strange as it may seem, the writer found practically all herds to contain as many males as females.

Vitally important also, was the question to providing nourishing feeds in sufficient quantity, for much of the grazing ground was covered with grass so poor in nutrients that five acres could not support a single water buffalo, but when planted with imported grasses such as Gordura, Napier, and Guinea grass, this forage grew as luxuriantly as in the Philippine Islands. Another question of prime importance in southwest China is that of mineral deficiency. Unless properly dealt with, no animal improvement program can reach the limit of its possibilities. Care and management conditions differ in different parts of the province and, while usually not so important as breeding and feeding, generally need attention.

To convince the large majority of live stock owners that one has a plan whereby they can make more money from raising animals, one must be able to show them that the plan is within their means. If one is to increase the value of live stock by millions

instead of thousands, it is of little value to ask the farmers to buy expensive foreign breeds which he has not the money to purchase and with the care of which he is unfamiliar. The writer therefore adopted the plan of organizing live stock breeding clubs in those sections of the province where groups of farmers together own 25 or more animals.

Breeding clubs were started by calling meetings of the live stock owners through the village magistrates. The farmers were invariably pleased to learn that the government desired to help them make more money from raising live stock and always ex-

FIG. 6. Method of vaccination used in Kwangsi Province, Southwest China.

pressed a willingness to coöperate within their means. At first, the stockmen were asked only to allow the Bureau representatives to do two things: (a) select their breeding sires and (b) castrate all the unfit over six months of age. In addition, the members of live stock breeding clubs were requested not to sell their breeding sires unless they were to be replaced with better stock. At the same time, the farmers were induced to prepare sections of their grazing land properly for planting the imported forage.

For uncounted centuries the Chinese farmers had been tilling the soil with a plow that cuts but four inches in depth. The Bureau furnished a subsoil plow that turned over the soil for twelve inches in depth. That trick alone, plus furnishing vigorous seed-stock, was all that was necessary to produce a satisfactory feed in sufficient quantity. One definite lesson the writer quickly learned was that merely giving them advice was a waste of time and effort and that the only effective way to secure positive results was by using trained Government men working *directly with the farmers.*

With the animal improvement program well under way in the "demonstration province," the writer turned his attention to coöperation with other government organizations engaged in bettering the condition of the farmers. In this connection, the following five-point program was devised and put into operation:

1. Introducing an appropriate set of lectures on animal welfare to be given to the Political Science Training class of the Kwangsi. (These men go to the villages and explain what the Government is doing for them.)
2. Introducing an appropriate set of lectures on animal welfare as above into the curricula of the army school for training future village head men and magistrates. As these men are in close contact with the farmers, this was the cheapest way of securing that quality of coöperation which comes only from an understanding of objectives and how best to secure them.
3. Introducing an appropriate set of lectures on animal disease control, hygiene and sanitation and the relation of animal diseases to human health in the classes for sanitary inspectors in the School of Medicine, thus enabling those inspectors to remedy unsatisfactory conditions found in the keeping and handling of animals to minimize the transference of animal diseases to human beings, particularly tuberculosis and internal parasites, which take such a heavy toll of life and health in the Orient.
4. Introducing an appropriate set of lectures on animal welfare and the relation of animal diseases to human health and farmer coöperation with the Bureau of Animal Welfare, in the curricula of the normal school.
5. Pamphlets, circulars and posters in simple language for general distribution.

At this time also, the writer persuaded the Government to pass suitable laws relating to castration and compulsory reporting, quarantine, disinfection, vaccination, and handling of dangerous and communicable animal diseases.

Six months of the third year had now passed into history, and the writer had now decided to return to the United States for permanent residence as soon as this job of organization was completed and left in hands that should insure its continuance. There being no modern-trained Chinese veterinarian available, arrangements were made for a competent Chinese businessman to take over the direction of the Bureau of Animal Welfare, the writer acting as his adviser during the remaining half of the year.

Three years after its establishment, a modern laboratory, teaching plant and executive offices, representing an investment of $350,000.00 for buildings and equipment was in full operation at Nanning, Kwangsi 600 miles west of Canton and 180 miles north of the French Indo-China frontier, producing enough vaccine to immunize 3,000 animals per week, vaccinating being done by seven specially trained native vaccinating crews, with 200 live stock inspectors permanently stationed in the field and a live stock improvement program under way to improve native cattle

by selection, castration and the introduction of forage found to be successfully grown in Kwangsi. The program for coöperation with other Government entities was also working out satisfactorily. So was the man selected as the future Director of the new Bureau.

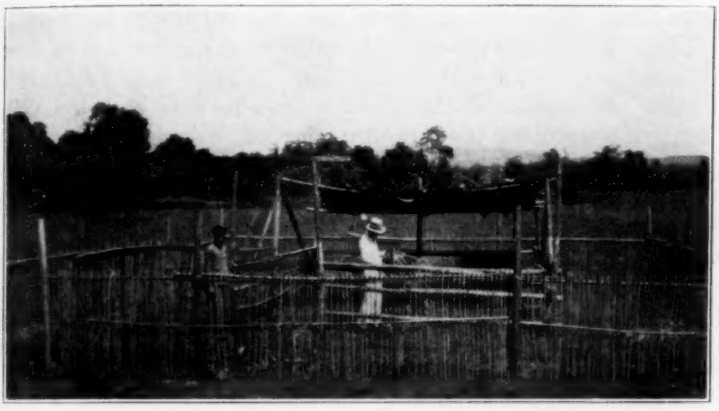

FIG. 7. Double-fence quarantine corral used in Kwangsi Province, Southwest China.

Nothing now remained to be done except to take a motion-picture record of the Kwangsi Bureau of Animal Industry headquarters at Nanning showing the manner in which the school, laboratory, and field work was being carried out. This was done with the aid of the cinematographic section of the Kwangsi Army.

Beef Cattle Situation

In reviewing the beef cattle situation, prices of most grades of slaughter cattle are expected to continue through early fall at a higher level than last year, according to a report from the Bureau of Agricultural Economics. Beef steers brought prices above $17.00 during the closing days of July and $18.50 toward the end of August, making a new top for recent years.

With relatively high prices of beef cattle at this time, there may be a strong demand for stocker and feeder cattle this fall, if the corn crop continues to look favorable in sections where cattle are usually fed. If a heavy stocking of feeder cattle is made, the price will probably decline next winter and spring.

The only reward of virtue is virtue; the only way to have a friend is to be one.—*Emerson.*

THE PUBLIC HEALTH PROGRAM UNDER TITLE VI OF THE SOCIAL SECURITY ACT*

By H. A. HOLLE, *Washington, D. C.*
Assistant Surgeon, U. S. Public Health Service

More than 100 years ago, laws were passed which authorized the federal government to aid the states in the execution of their quarantine laws and health legislation. In laws enacted in 1890 and 1893, the Public Health Service was further charged with the duty of preventing the interstate spread of diseases. In order that such responsibility might be effectively met, the government has long realized that prevention must begin locally and that the effective mechanism incident to such control of communicable disease must necessarily originate within the states and counties. The responsibility, therefore, in the control and prevention of the spread of diseases is shared jointly by the local, state and federal governments.

The Public Health Service has been coöperating with the states for the past 19 years in the organization and maintenance of state and local health service. This was accomplished by the assignment of Public Health Service officers on request by states to duty within such states, by the assignment of other technical personnel and also in the financial participation in state and local health budgets.

In the year 1917, $25,000 was provided for coöperative work with the states in studies and demonstrations in rural health work, and since that time appropriations of limited amounts have been made by Congress until the enactment of the recent Social Security legislation. However, there had been no permanent provision for financial grants-in-aid to states on an annual basis. With the passage of this act, therefore, adequate recognition by the federal government of its share of the responsibility was assured. Under the provisions of Title VI of the Social Security Act, authority was granted for an annual appropriation of $8,000,000 for the purpose of assisting the states, counties and health districts and other political subdivisions of the states in the establishment and maintenance of adequate health service, including the training of personnel for state and local health work.

Authority was also given for an annual appropriation of $2,000,000 to the Public Health Service for important research

*Presented at the seventy-fourth annual meeting of the American Veterinary Medical Association, Omaha, Neb., August 16-20, 1937.

activities of the Service and for the expenses of administration of federal funds granted to the states, as well as for the expenses of coöperation with such states in the establishment and maintenance of state and local health service. Fortunately, the Public Health Service is qualified by long experience in coöperative health work with the states and through such experience is well equipped to render valuable and effective assistance without having to go through the usual transitional and adjustment period involving unnecessary motion and expense through the trial and error method.

Comprehensive Program of Public Health

It was the purpose of Congress in passing Title VI of the Act to stimulate a comprehensive program of public health throughout the entire nation, and technical and financial assistance by the federal government was provided for this purpose. It was intended, however, that the states and local communities should largely support and administer their respective health programs. Federal funds were made available for the purpose of strengthening state and local health departments and providing adequate facilities for the promotion and administrative guidance of district, county and city health services. Financial assistance to district, county and state health services through their state health deparments was also made possible. Funds for the purpose of training personnel already employed or to be employed in state and local health departments were authorized. The Conference of State and Territorial Health Officers with the Surgeon General of the Public Health Service in June, 1935, approved the following recommendations:

> No state or territory should be eligible for aid unless and until it shall have provided or provides in its proposed plan for certain essentials of health organization hereinafter set forth.
>
> Grants-in-aid to existing state or local projects should be supplemental to funds now being expended and in no case should be used to replace existing state or local appropriations for such projects for the purpose of relieving state or local authorities from expenditures now being made.
>
> Although it is recognized that many state and territorial health departments conduct a number of important specialized activities, for the purpose of allocation of funds under this Act no state or territorial health department should be regarded as properly organized which does not provide as a minimum on a full-time basis the services listed below:
>
> *a.* A qualified full-time state or territorial health officer.
>
> *b.* Adequate provision for the administrative guidance of local health services.
>
> *c.* An acceptable vital statistics service. This should include an approved plan for the registration of births and deaths and the prompt forwarding of information relative thereto to the Public Health Service.

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d. An acceptable state public health laboratory service.

e. Adequate services for study, promotion, and supervision of maternal and child health.

f. Special services for the study, promotion, and guidance of local activities for the control of preventable diseases and for health promotion. This should include an approved plan for the collection of reports of notifiable diseases and the prompt forwarding of information relative thereto to the Public Health Service.

g. Services for study, promotion, and supervision of environmental sanitation.

The basis of a satisfactory local heath service is a well-organized health department, adequately financed, with trained personnel, supported by suitable laws and ordinances, by favorable public opinion, and by all professional groups. To this end financial aid is to be granted, through the state and territorial health departments, toward the development and maintenance of adequate city, county, and district health organizations.

Allotments of funds should be made toward the establishment or maintenance of city, county, or district health services only when the following basic principles of organization and services in a community are met:

1. The public health services of the city, county, or district shall be under the direction of a full-time health officer.
2. The personnel of the city, county, or district health department should include, in addition to the full-time health officer, such medical assistants, public health nurses, sanitation officers, and clerks as will insure at least a minimum of effective health service commensurate with the population and health problems of the area concerned.

The United States Public Health Service, in its allocation to states, should strive to foster the development of health units having a minimum personnel of one full-time health officer, two nurses, one sanitary officer, and one clerk. When a district health unit comprises more than one county or parts of counties there should be at least one public health nurse and one clerk for each county or similar political unit of government embraced in the health district. In areas whose economic status does not justify this desired minimum, the United States Public Health Service may feel free to modify these standards.

Personnel inclusive of health officers, nurses, sanitation officers, sanitary engineers, and other public health personnel employed under these grants-in-aid should meet the standards of qualifications established and recommended by the Conference of State and Territorial Health Officers.

The success of the Social Security Act in the field of public health will depend upon the availability and employment of competent and professional trained personnel. It is therefore recommended that funds be allocated to the states to assist in developing trained personnel for positions to be established for the extension of state, city, county, and district health organizations, and that minimum qualification standards for the necessary personnel be adopted by the Conference of State Territorial Health Officers to serve as one of the conditions upon which the federal funds provided in this Act shall be allocated to the states for state and local health services.

The Surgeon General of the Public Health Service has been made responsible for the allotment of the annual appropriation

for grants-in-aid to the states. In making the allotments, however, he is required by law to consider certain factors, namely, population, financial need in certain states and special health problems which place an unequal burden upon certain states as compared with the others. The apportionment of funds on these bases is left to the discretion of the Surgeon General, subject to the approval of the Secretary of the Treasury, and the allotment must be made at the beginning of each federal fiscal year. The eligibility of the several states to receive the allotments available to them depends in part upon the matching of such allotments by state or local appropriations for public health purposes in accordance with regulations issued annually by the Surgeon General.

The fact that an allotment has been made to a state, therefore, does not necessarily mean that such state will actually receive the full amount of its allotment, and the state receives payments only after its plans and budgets have been approved in accordance with these regulations. The various state health officers, at the beginning of each fiscal year, present plans and budgets of proposed expenditures not only of federal funds but also of state and local funds for public health purposes. Each state health officer has the privilege of originating all plans that he considers best for his particular state, and it is the policy of the Public Health Service not to object to any plan which is reasonably sound and which gives promise of a satisfactory return on the investment.

Budgets are carefully checked and if considered to have been prepared in accordance with sound public health administration procedures, the Surgeon General gives his approval, after which payment of federal funds for the first quarter is made to each state from its allotment. Other quarterly payments are made at the beginning of each succeeding quarter. Once these funds have been paid to a state they become state funds, and are administered by the state in accordance with state laws and for the purposes set forth in the Social Security Act. All personnel employed within the states paid with funds allotted under Title VI come under the classification of state and not federal personnel, as is frequently thought.

States Free to Adopt Plans

A standard pattern of organization and administrative practice within the states has not been recommended by the Public Health Service, as it is thought that each state should adopt plans best adapted to its particular needs. This policy has stimulated local initiative, encouraged experimentation in the various methods of administrative practice and allowed adequate readjust-

ment to changing conditions and new concepts of public health problems.

The Public Health Service renders all the assistance possible to the states in the preparation of their plans and budgets. In order that this might be done effectively, five regional offices have been established in various parts of the country. A regional consultant experienced in public health methods and public health administration is stationed at each of these regional offices, and each state consults this individual at will. It has been possible in this way for the Public Health Service to be of greater service to the various state health officers than if all correspondence or consultation came direct from Washington. Our regional consultants have become thoroughly familiar with the problems of the various states with which they are concerned, and the arrangement has been most satisfactory,

Trained Personnel Urgently Needed

It is not difficult to realize that the impetus given to public health work within the states resulted in a scarcity of individuals adequately trained in public health, and so a portion of the total grant-in-aid amounting to about $1,000,000 annually was set aside for the purpose of assisting the several states to finance the training of personnel over a comparatively short period of time, To meet this urgent need of trained personnel, it became necessary to provide additional facilities for short intensive courses of instruction for health officers, nurses and other personnel. Regional training centers were established in certain schools for this purpose, after designation by a majority vote of the state health officers in the territory to be served. In the establishment of such training centers special consideration was given those schools which already had facilities for public health instruction which could be expanded.

It is generally recognized in the field of public health that an individual who has a professional education in medicine, nursing, engineering, veterinary medicine or any other professional science is not thereby qualified for public health work. It is highly desirable that all public health workers eventually receive at least one full year of special training, and fellowships have been provided in practically every one of the states for such training for certain individuals within their health departments. The minimum amount of training which an individual should possess before he begins his career in public health work should be a short course as now provided in the training centers mentioned above in either one semester or one trimester of intramural instruction, and it

is considered desirable that those who take these short courses shall return later for completion of the full year's work.

Standard Qualifications Recommended

The Conference of State and Territorial Health Officers has recommended a schedule of standard qualification requirements for persons employed in public health work. The Public Health Service considers these as desirable standards and recommends that they be used as guides by the various states if they choose to use them. The standards are not set up on a professional basis but as positions, such as "health officer," "public health nurse," "public health engineer," "sanitarian" and "sanitary officer."

A good health department is not composed of a division of doctors, nurses, veterinarians or engineers as such. It must be remembered that there is work to be done and individuals employed by the health department occupy positions for the purpose of doing this work. If the various classes of public health personnel work independently, no coördinated accomplishments might be expected. It is therefore essential that the health officer in charge of the program should direct all personnel in accordance with a well-developed plan to the end that the community might have the full benefit of all technical talents which are available.

Veterinary Problems in Public Health Work

The important relationship between public health and certain veterinary problems is fully recognized, and the advantages of expert veterinary assistance in protecting the public health by assuring safe milk, meat, and other food supplies are well known by the Public Health Service and the state health officers. It is entirely permissible for a veterinarian to be appointed by a state health officer to any position for which he is prepared by his professional training and his special training in public health. State and local health agencies employing veterinarians at the present time are for the most part utilizing their services in positions such as "Milk inspector," "meat inspector," "food inspector" or a combination of all of them.

That part of the Social Security Act (Section 603) which authorized expenditure of funds by the Public Health Service for the investigation of diseases and sanitation involves studies which are carried out principally under the Division of Scientific Research, and includes work relating to every important branch of public health. Studies are now being conducted mainly in four divisions at the National Institute of Health in Washington, namely: the Divisions of Pharmacology, Chemistry, Zoölogy

and Pathology, and Bacteriology. They include studies relating to meningitis, tularemia, undulant fever, staphylococcus and streptococcus infections, diarrheal diseases of the Southwest, studies of bacterial dissociation, Rocky Mountain spotted fever, amebic dysentery, trypanosomiasis, studies in immunity, mycotic diseases, serological testing, sugar tolerance in malignancy, and many others.

Trichinosis and Oxyuriasis

Within the Division of Zoölogy, which was organized with funds made available by the Social Security Act, the two major problems in the process of investigation are trichinosis, including a comprehensive study from zoölogical and medical points of view, and oxyuriasis, the study of which is planned similarly to that for trichinosis.

All grants-in-aid to the several states by the federal government constitute an attempt on the part of the government to equalize the opportunities for the individuals within the states to receive the fundamentals necessary for existence and health. When the broad purpose of the Social Security Act is considered it will be seen that such attempt has here been made along several different fronts. Each state necessarily retains jurisdiction over the methods by which this is to be accomplished, and is directly responsible for the administration of its own programs and activities. The federal government, however, is in an excellent position to render valuable coöperative service and give valuable information to the various agencies within the states, and is willing and able to assist such states in every field of endeavor possible. This applies to the public health grants-in-aid as well as to all others.

It is in the spirit of coöperation that the Surgeon General embarks upon a vast national health program to eliminate from our country preventable communicable diseases, inadequate sanitary facilities, and general debilitating factors which take their toll from our population.

Singing Mice

Capt. Guy Dolman, assistant keeper, British Museum, London, according to *The Veterinary Record*, reports that the noise made by mice and described as singing is brought about by a pathological condition of the respiratory tract. Bronchitis, laryngitis or inflammation of the nares causes the animal to gasp for breath, especially when forced to exercise on a treadmill. Sometimes the disease is confined to one mouse, but at other times it affects whole colonies.

SHIGELLA NASALIS SP. NOV., A SECONDARY INVADER OF THE NASAL PASSAGES OF CHICKENS*

By L. E. ERWIN, J. P. DELAPLANE *and* H. O. STUART
Rhode Island Agricultural Experiment Station
Kingston, R. I.

INTRODUCTION

During the course of our studies of upper respiratory infections of fowls, a Gram-negative rod was isolated, which preliminary observations indicated was a secondary invader, capable of bringing about the coagulation of nasal exudates produced by certain other inciting agents. Inasmuch as organisms of the Pasteurella group have been found to produce exudates of this character, it was felt that this particular organism warranted further study.

SOURCE AND NATURE OF THE DISEASE MATERIAL

In October, 1935, a shipment of birds from a point in the Middle West became available to us for observation. These birds, when received, showed an upper respiratory disease characterized by a profuse purulent nasal exudate associated with a distinct bulging and swelling of the nasal chambers. The eyes showed an excessive lacrimation which had dried on the eyelids and which, combined with the swellings, tended to glue them shut. The character of the exudate in the nasal chambers was that of a coagulated purulent material.

ISOLATIONS

Nasal exudate was obtained from these fowls and inoculated into the nasal passages of two susceptible chickens. After 48 hours, the inoculated chickens showed clinical symptoms similar to the fowls from which material had been obtained for the inoculations. The two birds were killed and material from their swellings was used to inoculate agar slants to which citrated blood had been added, the technic being similar to that which Delaplane, Erwin and Stuart[1, 2] had found suitable for isolating *Hemophilus gallinarum*. After incubation for 24 hours at 37° C., growth was evident in the blood medium by its increased tur-

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bidity. Also, there was a fine growth on the exposed surface of the agar slant which, upon examination, proved to be a pure culture of a Gram-negative rod. *Hemophilus gallinarum* could not be demonstrated to be growing in the medium.

The disease was maintained for a time in susceptible fowls by continued passages. The cultural results of several of the specimens, when conducted in the above manner consistently, showed the same organism or were negative.

Inoculation Experiments

The organism was found so consistently that we thought it might have some significance in the respiratory disease being studied. However, pure cultures, when inoculated into the nasal passages of fowls, failed to incite a coryza. Subcutaneous inoculations of the organisms produced marked swellings at the points of inoculation.

The organisms were then mixed with cultures of *Hemophilus gallinarum* and inoculated into the nasal passages of three birds. Within 24 hours, a nasal exudate typical of the later infection appeared. After 48 hours, the birds showed facial swellings of an edematous nature and the beginning of distention of the nasal chambers. After 72 hours, the nasal chambers bulged in a manner similar to that observed in fowls inoculated with the original nasal exudate (fig. 1). Examination of the nasal chambers showed an exudate of a coagulated purulent type. After numerous intranasal inoculations of fowls with *Hemophilus gallinarum* by the writers, this particular type of exudate has not been observed. Material from these birds, when used to inoculate suitable culture media, resulted in the recovery of the Gram-negative rod and *Hemophilus gallinarum*. These results seem to indicate that the organism in question, although quite unable by itself to produce an inflammatory reaction of the nasal passages, is able, when combined with an inciting type of organism such as *Hemophilus gallinarum*, to grow profusely and bring about a coagulated purulent type of exudate.

The exudate of the field type, when inoculated into the cloaca of chickens in the manner used for laryngotracheitis vaccination, resulted in reddening, swelling, and the presence of a false membrane simulating in some respects that obtained from laryngotracheitis virus. In some instances there was an extension of the infection through the cloaca into the peritoneal cavity, resulting in peritonitis and death. Since previous work at this station has demonstrated that *Hemophilus gallinarum* does not

induce a cloacal reaction, an effort was made to determine whether the organism in question was capable of producing this type of an inflammation. The inoculation of pure cultures in the cloaca induced a similar reaction, as was observed with that produced by the use of the nasal exudate.

The primary inciting agent of the disease condition in question was not determined. *Hemophilus gallinarum* was not found to be present.

FIG. 1. Chicken showing distention of the nasal chamber as a result of having been inoculated with a mixed culture of *Hemophilus gallinarum* and *Shigella nasalis*.

CULTURAL CHARACTERISTICS

Beef extract agar slants: In tubes held at 37° C., the growth along the strokes at the end of 24 hours is moderate to abundant, very fine and granular, whitish-gray in color; surface, smooth and glistening.

Eosine-methylene blue agar slants: The growth is very scanty and fine in texture; the colonies grayish-white in color.

Russell's double-sugar agar slant: An acid butt and slant is produced in 24 hours. The growth on the slant is very fine and granular; color is a grayish-white.

Saccharose-mannitol agar slants: An acid butt and slant is produced in 24 hours. The growth on the slant is the same as on R. D. S. agar.

Stock culture agar slants (Digestive Ferments Company): Growth is abundant and creamy white in color at the end of 24 hours.

Potato slants: The growth is very scanty and very hard to detect, even after 72 hours.

Glucose-agar slants: Growth failed to appear on this medium, even after 96 hours.

Blood-agar plates: On poured plates, surface colonies can be detected with the naked eye on the second day. These colonies are circular, slightly raised, whitish-gray in color and translucent, resembling non-hemolytic streptococci colonies.

Beef-extract broth: This medium clouded most densely toward the surface after 24 hours. By the second day, pellicle formation commenced. This floated near the surface and upon slight agitation or even in undisturbed tubes of older cultures gradually settled to the bottom.

Beef-heart broth: Pellicle formation was noticed at the end of 24 hours. As in the case of beef extract broth, the pellicle gradually settled to the bottom of the tube.

PHYSIOLOGICAL PROPERTIES

Chromogenesis: When grown on beef extract media, the organism did not produce pigment.

Gelatin: In stab cultures, no liquefaction occurred after 40 days. Uniform growth appeared after 72 hours. Line of puncture, filiform.

Litmus milk: No change occurred in ten days.

Fermentation of sugars and alcohols: The following carbohydrates were prepared in concentrations of 1 per cent with peptone water as the basic medium: glucose, saccharose, lactose, maltose, levulose, galactose, xylose, dextrine, mannitol, sorbitol, dulcitol, salicin, rhamnose, raffinose, arabinose, adonitol and inositol. The fermentable solutions were set up in Durham fermentation tubes with phenol red as an indicator. These were inoculated from young agar slant cultures and observed every 24 hours up to ten days. Acid production was observed in all test solutions at the end of 24 hours with the exception of dulcitol, which showed acid production after 48 hours. The color change in all solutions increased up to 72 hours and after that no further change was observed. No pellicle formation was observed in any of these solutions.

Reduction of nitrates: Nitrates are reduced. The reduction of nitrates was obtained at the end of 36 hours.

Production of hydrogen sulfide: Hydrogen sulfide is produced in only very small amounts, as indicated by reaction on Kligler lead acetate agar.

Production of indol: Indol is produced. Tryptophane broth cultures, six days old, were tested with Kovac's solution.

Toleration of sodium chloride: Organisms were grown on beef-extract agar slants containing sodium chloride in concentrations of 0, 1, 2, 3, 5, 7, and 10 per cent and examined every 24 hours for three days. It was found that the organism would not grow on the slants containing no sodium chloride. The growth increased on the slants containing 1, 2, and 3 per cent salt. Maximum growth occurred on 3 per cent slants. Growth decreased on the 5 and 7 per cent slants, and on the 10 per cent slants, very little could be detected. It is evident that this organism can tolerate sodium chloride up to 10 per cent.

Relation to free oxygen: This organism grows well under aerobic conditions. When tested for anaerobiosis by Buchner's method (using pyrogallic acid and caustic soda to remove oxygen), no growth occurred.

Temperature relations: The optimum temperature for growth lies between 37 and 40° C. Growth occurs at 20° C. but it is very thin and scanty. The maximum temperature is about 42 to 44° C.

Technical description: Rods, with rounded end, 0.5 μ-1.5 μ by 0.2 μ-0.3 μ, occurring singly, or rarely in pairs. Non-motile, non-spore-forming, non-encapsulated, non-acid-fast, staining well with aniline dyes and decolorized by Gram's method.

Moderate growth on gelatin slab with no liquefaction. Blood-agar colonies circular, whitish-gray, smooth, slightly raised and translucent. Agar slant growth smooth, fairly abundant, whitish-gray, slightly raised, translucent with no chromogenesis. Growth in extract broth turbid, at first dense toward the surface, with pellicle formation after second day; later, sedimentation occurs. No change in litmus milk in ten days. Growth on potato very scanty; flat, smooth surface. Indol formed. Nitrates reduced. Acid but no gas generally produced from carbohydrates. Slight production of hydrogen sulfide. Sodium chloride necessary for growth; optimum concentration, 3 per cent; maximum, 10 per cent. Aerobic. Optimum temperature, 37-40° C.

Habitat: Isolated from nasal passages of chickens.

SUMMARY

The morphological, cultural and physiological characters of the organisms are described in detail.

A non-motile bacillus, specifically characterized as *Shigella nasalis* sp. nov., was isolated in pure culture from the bulged swellings of fowls showing an upper respiratory disease of the type described in this paper. This organism alone failed to incite a coryza of the nasal passages but when combined with *H. gallinarum*, the nasal exudate was of a coagulated purulent nature. The exudate when inoculated in the cloaca incited a reaction simulating in many respects that induced by laryngotracheitis virus. Pure cultures of the organism likewise incited a similar reaction of the cloaca. In both instances there was an extension of the infection through the cloaca in some cases causing peritonitis and death.

ACKNOWLEDGMENT

The writers acknowledge with thanks the assistance of Dr. J. C. Weldin, Bacteriology Department, Rhode Island State College, in the planning of the work and preparation of this manuscript.

REFERENCES

[1]Delaplane, J. P., Erwin, L. E., and Stuart, H. O.: Jour. Agr. Res., lii (1935), p. 377.

[2]Delaplane, J. P., Erwin, L. E., and Stuart, H. O.: R. I. Agr. Exp. Sta. Bul. 244 (1934).

Artificial Feeding of Colts

Feeding orphan colts is often a problem for the veterinarian. The following formula offers a substitute for the mare's milk: 20 ounces of cows' milk, 12 ounces of lime water and 4 level tablespoonsful of sugar. Give this in 2-ounce doses every two hours. If there is difficulty in getting the colt to swallow the liquid, it may be given through a small stomach-tube or horse catheter passed through the nostril.

Too Small

A school teacher was cashing her monthly check in the bank. The teller apologized for giving her old bills, saying: "I hope you're not afraid of microbes."

"Not a bit of it," replied the school teacher. "No microbes could live on my salary."

Southern Farmer.

AVIAN TUBERCULOSIS*

By G. S. HARSHFIELD, LEE M. RODERICK *and* M. C. HAWN
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Work on a comprehensive project on the epidemiology of avian tuberculosis has been in progress at this station since 1923. The results of much of the work done under that project were published in Bulletin 279.[1] Data on certain additional features of the problem, however, are presented in this paper.

THE POSSIBILITY OF THE TRANSMISSION OF AVIAN TUBERCULOSIS THROUGH THE EGG TO THE CHICK

It is generally agreed that the infection in fowls is ordinarily acquired by way of the digestive tract through the ingestion of *Mycobacterium tuberculosis* (avian). The question of the possible transmission of the disease through the egg, however, has been studied by a number of workers. The greater part of that work involved an examination of the eggs of naturally and artificially infected fowls, as well as artificially infected eggs, for the avian tubercle bacillus. The results of most of those studies are summarized in an article by Verge,[2] which covers the work of Artault, Fitch et al, Gärtner, Martin, Räbiger, Rautmann and Spigl, Richters, Beller and Henniger, Klimmer, Lichtenstein, Higgins, Liverani and Wahby. Since the appearance of the paper by Verge, Stafseth and associates[3] reported the examination of 93 eggs from artificially infected hens and that they obtained pure cultures of tuberculosis from 13 (13.96 per cent) of the eggs.

The percentage of infected eggs found in some of the work cited by Verge was sometimes quite high when microscopic examination was made but much lower when cultural and inoculation methods were used. Microscopic examination does not identify the acid-fast organism as a tubercle bacillus. In general, higher percentages of infection were also reported in eggs of experimentally infected fowls than in those of naturally infected birds. It seems likely, moreover, that the eggs containing tubercle bacilli might have a lower hatchability.

The significant feature of this problem is to what extent is the disease transmitted to the young chick through the egg. Tuberculosis appears in an occasional farm flock where the source

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of the infection cannot satisfactorily be explained on the basis of infected premises or the addition of infected birds. Furthermore, we find this significant statement in the Report of the Chief of the Bureau of Animal Industry of the United States Department of Agriculture for 1933, p. 18:

> Field reports indicating that tuberculosis is spread in baby chicks hatched in commercial hatcheries from eggs of tuberculous hens, have made reinvestigation of this subject appear urgent.

Fewer workers have examined the chicks hatched from the eggs of tuberculous hens and raised under controlled conditions. Thorp and Graham[4] hatched 52 chicks from artificially inoculated eggs and 29 (55.7 per cent) showed gross lesions on autopsy. Fitch and Lubbehusen[5] hatched 697 chicks from eggs of 88 tuberculin-reacting hens. In none of them, did they find tuberculosis by cultural examination, tuberculin testing and autopsy. They believe that transmission of tuberculosis through the egg rarely, if ever, occurs. Stafseth and associates[3] hatched 13 chicks from artificially infected hens and 18 chicks from naturally infected hens. None developed tuberculosis.

Experimental work: A flock of tuberculous chickens was secured for the work by Dr. Fred Low, of the Bureau of Animal Industry, in 1935 and another group in 1936. The hens had reacted to the tuberculin test in the field in the course of avian tuberculosis control work. The birds were selected as subjects most likely to live through the period of the experiment and produce eggs. Leghorns predominated although other breeds were represented. Positive reactors to pullorum disease were eliminated so that the loss of chicks from pullorum disease was not a factor. The hens were banded and trap-nested and the eggs identified with the band number. Settings were made once a week with the eggs on hand regardless of the egg size. The shells were disinfected before starting incubation by immersing the eggs for three to five minutes in Iodine Suspensoid (Merck), diluted one pound to three gallons of water. Pedigree baskets were used at hatching time and the chicks banded to maintain their identity.

The chicks were brooded inside until mild weather and then removed to shelter houses on a clean range. Tuberculin testing was started as soon as the birds reached a satisfactory size. Those chicks which died before tests could be made or which had to be slaughtered after only one or two tests were autopsied and cultures made from the liver and spleen on Petroff's gentian violet egg medium. Four tubes were inoculated from each bird. Antiformin was used in 1935 to destroy the contamination and

in 1936, 3 per cent sodium hydroxide solution was used for that purpose. Six per cent hydrochloric acid solution was used to neutralize the alkali.

The tuberculous hens were killed and autopsied as soon as enough eggs for the hatching season had been collected. A careful examination was made for gross lesions of tuberculosis. The two flocks included 175 hens. All the hens had reacted to the tuberculin test but there were 32 hens which produced chicks, in which no evidence of tuberculosis was seen on autopsy. No attempt was made to prove the presence of infection in those hens. It seems probable that the organism could have been isolated by cultural methods from some of the hens which had given a positive tuberculin test but which failed to show any gross lesions of the disease. Feldman, Bollman and Mann[6] commented on this type of infection. Fitch, Lubbehusen and Dikmans[7] found one positively reacting hen which laid eggs containing tubercle bacilli, yet no gross lesions of tuberculosis could be found on autopsy.

The extent of disease in the other birds varied from barely visible tubercles to extensive generalized miliary tuberculosis or large caseous masses involving the liver, spleen and intestine. All degrees of infection which would be found in any badly infected flock were found among these fowls. In none of the hens was there evidence of tuberculosis of the ovary, although in one the oviduct was involved and several had tuberculous masses at or near the cloaca.

TABLE I—*Summary of the experimental work with chicks hatched from eggs produced by tuberculous hens.*

	1935	1936	TOTALS
Hens in the flock	104	71	175
Hens which produced eggs	92	65	157
Hens which produced chicks	69	65	134
Hens showing gross lesions on autopsy which produced chicks	52	50	102
Hens negative on autopsy which produced chicks	17	15	32
Percentage of hatchability of all eggs set	65.6	68.5	
Total number of chicks hatched and banded	699	819	1518
Chicks giving three or more negative tuberculin tests	229	652	881
Chicks giving two negative tests	15	36	51
Chicks giving one negative test	18	4	22
Chicks cultured negative	361	96	457
Total number of chicks negative	623	788	1411
Chicks not examined and/or examination unsatisfactory	76	31	107
Chicks in which tuberculosis was found	0	0	0

Table I summarizes the findings made in this study. A total of 1,518 chicks were hatched and banded during 1935 and 1936. The average hatchability of all settings in 1935 was 65.6 per cent and in 1936, 68.5 per cent. Both figures would have been somewhat higher, but difficulty was experienced with incubation of the first setting each year, resulting in a larger number of dead embryos than in later hatches. The baby chick losses were negligible in 1935 but somewhat higher in 1936, due to weak chicks in certain hatches. These chicks were included among those cultured. The hens were well fed. When everything is considered, the egg production from these tuberculous hens was satisfactory and the percentage of infertile eggs was often low indeed. The hatchability of the eggs from these tuberculous hens seems to have been as high as that of normal healthy hens under routine conditions. In general, it seemed that the chicks were fully as vigorous as those from healthy hens.

An outbreak of coccidiosis which arose from some unforeseen circumstance in the 1935 flock, however, resulted in a loss of approximately 20 per cent of the total hatch that year. This necessitated resorting to culture methods more than was originally planned. Neurolymphomatosis accounted for the majority of later losses in both groups. After subtracting the 107 chicks on which cultures were contaminated or no examination secured, a total of 1,411 chicks remained which were examined either by tuberculin tests or culturing of the livers and spleens. *In no instance* was tuberculosis found. In view of the number of chicks examined in this study, it is extremely doubtful if egg transmission of tuberculosis to the chick is a factor in the dissemination of the disease. Fowl tuberculosis is primarily an environmental problem. If appropriate sanitary measures, therefore, are practiced on the farm and in hatcheries, it seems doubtful if the requirement of the tuberculin test of breeding stock is justified as a control measure to minimize the danger of the transmission of the disease to the young chicks.

Avian Tuberculosis in Crows

We have been interested in the finding of additional reservoirs of avian tuberculosis, for the presence of the disease in heterologous hosts may explain the spread of the infection to clean flocks. Mitchell and Duthie[8] and Beaudette and Hudson[9] have reported finding tuberculosis in the common crow. Through the coöperation of the Cass County Game Conservation Association, we were afforded an opportunity to examine 246 crows. Of this number, eight showed gross lesions of the disease and six of

them were of the avian type. Two were negative on inoculation of chickens and cultures. The typing results are in accord, therefore, with those of Mitchell.[10] The lesions usually were limited to a few nodules. They did not have the disseminated generalized character of those of domesticated fowls. It seems probable that the crows may have acquired the disease by feasting on dead tuberculous fowls which had not been properly destroyed. While crows are omnipresent, it seems rather doubtful if they play any essential rôle in the dissemination of the disease. From other studies at this laboratory, it seems again that the significant feature of the fowl tuberculosis problem is the reservoir of infection in the soil.

Avian Tuberculosis of Sheep

In 1934[11] the results of the typing experiments of six cases of generalized tuberculosis of sheep were reported from this laboratory. Another case was reported by Schalk.[12] In each instance, avian infection was found. This was surprising and contrary to the general belief that the rare case of tuberculosis found in sheep is of the bovine type. We have had the opportunity to examine and type 19 additional cases of suspected tuberculosis of sheep which were found in supervised slaughtering establishments. Portions of affected organs were submitted to the laboratory through the courtesy of Drs. John R. Mohler, L. T. Giltner, L. Enos Day, W. S. Gochenour, J. A. Thompson, H. D. Osborne, L. M. Henry and H. Rae, of the U. S. Bureau of Animal Industry.

The extent of the tuberculous processes in these sheep is shown in table II. Additional lesions were reported in single instances in the cervical, sublumbar, renal and supramammary lymph-glands, the peritoneum and udder. The gross appearance of the lesions differed little from that of the cases previously examined. The extensive calcification in the advanced infections was the most noticeable characteristic of tuberculosis in this species. One of the cases (3845) showed extensive involvement of the mammary glands. In another (6932), the supramammary lymph-node was tuberculous. Guinea pigs and healthy chickens were injected with material from the lesions in the typing of these cases. Rabbits were injected in four instances. It will be noted that, in every case except one, the avian type of infection was found.

Avian tuberculosis has for years been a major problem of disease among a large proportion of farm poultry flocks of this

TABLE 11—*Extent of lesions in the sheep.*

LABORATORY NUMBER	WHERE SLAUGHTERED	WHEN RECEIVED	LESIONS												INFECTION TYPE
			BRONCHIAL	MEDIASTINAL	LUNGS	PLEURA	PORTAL	MESENTERIC	LIVER	SPLEEN	BONE	ILIAC	PRESCAPULAR	SUPRARENAL	
29061	Winona, Minn.	10– 8–34	+++	+++	+++		++	+++	+++		++				Avian
29654*	Unknown	10–17–34			+++										Indefinite
232*	New York, N. Y.	12–13–34			+++	++			+++	++					Avian
631	Winona, Minn.	2–12–35	+++	+++	+++		+++	+++	++						Avian
1134*	W. Fargo	3– 5–35	+++	+++	M		+++		M						Avian
3711	W. Fargo	8–13–35	++	++	+++			+++	+++	++		++			Avian
3845	W. Fargo	9– 6–35	+++	+++	+++			+++	+++	+++		+++			Avian
4003	W. Fargo	9–20–35	+++		M		+++	+++	+++	++					Avian
4742	W. Fargo	10–23–35	++	++	++			+							Avian
5039	W. Fargo	11– 5–35	++	++	++										Avian
5397	W. Fargo	11–22–35	++	++	+++				M	+++					Avian
6932	W. Fargo	4–11–36	+++	+++	+		+		++	+++			+		Avian
7584*	W. Fargo	5– 7–36	++		+++				+++	+++					Avian
493	W. Fargo	10– 6–36	++	++	+										Avian
494	W. Fargo	10– 6–36	+++	+++	+++		+++	+++	+++	+++	+++		+++	+++	Avian
1119	W. Fargo	10–30–36	+++	+++	+++		+++	+++	+++						Avian
1120	W. Fargo	10–30–36	+++	+++	M		+++	+++							Avian
1342	W. Fargo	11–10–36	++	+++	+++		+++	+	M	+					Avian
1794	W. Fargo	11–25–36	+++	+++	+++	+	++	+++	++	++				+	Avian

*Data incomplete.
Key: + = slight caseo-calcareous; + + = well marked caseo-calcareous; + + + = extensive caseo-calcareous; M = *miliary*.

area. It is only within recent years, however, that sheep have been raised extensively, so that with more diversified farming, many farms now maintain a flock of breeding ewes.

Most of the cases of avian tuberculosis which were secured in this work were slaughtered at the West Fargo plant. Nineteen of the 26 cases typed at this laboratory came from that source and 15 of them during 1935 and 1936. Two additional cases of ovine tuberculosis were found in that establishment in 1936 but were not typed. While it was impossible to trace the relation of any of these cases of tuberculosis to an infected flock of poultry, it seems logical to conclude that the increase in condemnations of sheep at this plant is brought about by the increase in the sheep population and their exposure to the large volume of avian infection on the farms of the area. It seems quite possible likewise that some cases of tuberculosis in sheep may not have been recognized as such in the past.

The inspection of sheep may not be so detailed as that of cattle and hogs and some of the cases in the early stages may be overlooked. Possibly some of the cases of pseudo-tuberculosis are in reality tuberculosis, for in a few of the specimens the lesions were similar to those observed in caseous lymphadenitis. Only one of the 26 cases typed at this laboratory (L. N. 29654), involved other than an avian type. It is probable that the bovine type was involved in that case, although Van Es[13] reported on the finding of a human strain in a sheep specimen. All of the subjects were mature sheep, except L. N. 3711 which was a spring lamb. The results of typing of this series of 26 cases of tuberculosis in sheep is indicative of the source and character of much of the tuberculous infection in sheep with particular reference to this area.

*Data incomplete.
Key: + = slight caseo-calcareous; ++ = well marked caseo-calcareous; +++ = extensive caseo-calcareous; M = miliary.

References

[1]Schalk, A. F., Roderick, L. M., Foust, H. L., and Harshfield, G. S.: N. Dak. Agr. Exp. Sta. Tech. Bul. 279 (1935).
[2]Verge, J.: Rec. de Méd. Vét., xii (1935), p. 110.
[3]Stafseth, H. J., Biggar, R. J., Thompson, W. W., and Neu, L.: Jour. A. V. M. A., lxxxv (1934), n. s. 38 (3), pp. 342-359.
[4]Thorp, F. Jr., and Graham, R.: No. Amer. Vet., xi (1930), no. 12, p. 34.
[5]Fitch, C. P., and Lubbehusen, R. E.: Jour. A. V. M. A., lxxii (1928), n. s. 25 (5), pp. 636-649.
[6]Feldman, W. H., Bollman, J. D., and Mann, F. C.: Jour. A. V. M. A., lxxxix (1936), n. s. 42 (5), pp. 551-561.
[7]Fitch, C. P., Lubbenhusen, R. E., and Dikmans, R. N.: Jour. A. V. M. A., lxvi (1924), n. s. 19 (1), pp. 43-53.
[8]Mitchell, C. A., and Duthie, R. C.: Amer. Rev. Tuber., xix (1929), p. 134.
[9]Beaudette, F. R., and Hudson, C. B.: Jour. A. V. M. A., lxxxix (1936), n. s. 42 (2), pp. 215-217.
[10]Mitchell, C. A.: Cited by Kalter, L. B., Federighi, H., and Inman, O. L.: Ohio Jour. Sci., xxxiii (1933), p. 451.
[11]Harshfield, G. S., and Roderick, L. M.: Jour. A. V. M. A., lxxxv (1934), n. s. 38 (5), pp. 597-610.
[12]Schalk, A. F.: Jour. A. V. M. A., lxxxiv (1929), n. s. 27 (3), pp. 301-311.
[13]Van Es, L.: Jour. A. V. M. A., lxx (1927), n. s. 23 (6), pp. 775-780.

SUPPLEMENTARY NOTE TO ARTICLE ON EQUINE ENCEPHALOMYELITIS*

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Since submitting to the JOURNAL an article[1] on losses in horses following an outbreak of encephalomyelitis in 1936, it has been brought to my attention by Dr. R. M. du Toit, of the Onderstepoort Laboratories in South Africa, that some years ago similar losses occurred following immunization of horses against African horse-sickness by the simultaneous use of serum and virus. I find in the Fifth and Sixth Reports of the Director of Veterinary Research of the Union of South Africa, dated April, 1918, an article by Sir Arnold Theiler entitled, "Acute Liver-Atrophy and Parenchymatous Hepatitis in Horses," in which he describes a disease which corresponds in every way to the condition observed in Montana and other western states which developed following the 1936 outbreak of encephalomyelitis.

The disease described by Sir Arnold Theiler as acute liver-atrophy, and locally known as "staggers," was first observed in 1914 in horses which had been immunized against horse-sickness at the Onderstepoort Laboratory. Of 1,148 horses immunized, there were 27 cases of staggers (2.2 per cent), occurring mostly from 62 to 78 days after immunization, the shortest time being 27 days and the longest time 165 days. During the same period, the disease occurred in four out of 160 horses which had not been immunized. Of 1,411 army horses which were immunized against horse-sickness, there was a mortality from staggers of 4 to 5 per cent. Some cases were reported also in non-immunized horses. Of 1,154 horses immunized on farms, there was a mortality of 210 (18 per cent) and in the same region there were seven cases reported in non-immunized horses.

The author concludes that staggers may occur in non-immunized as well as immunized horses, but that the number of cases is much greater in immunized horses. He states that most of the non-immunized horses had a history of having been "salted." I do not know the meaning of this term, but evidently it refers to previous infection with horse-sickness.

The history of the losses in Montana in the fall of 1936 is very similar. Out of 89 cases of the disease, 81 were in horses which

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had been immunized against encephalomyelitis either with serum and virus or serum alone. This constituted 1.5 per cent of the number of horses immunized. The time interval between immunization and the appearance of symptoms varied from 32 to 92 days, 90 per cent of the cases occurring between 40 and 70 days after immunization.

The two conditions parallel each other in symptomatology, gross pathology, and histology. The detailed account of symptoms of "staggers" constitutes a perfect picture of the symptoms exhibited by the horses observed in our cases. The cardinal points were the rapid course, lack of fever, normal pulse, sweating, icterus, staggering gait, and violent pushing against obstacles. The gross pathology is very similar to that observed by us. The greatest emphasis was placed on the liver changes. The changes in the stomach and intestine were more marked in our cases than in staggers cases. Distension of the stomach and catarrhal gastro-enteritis were quite constant in our cases. The histology of the liver in staggers, as described by Sir Arnold Theiler, was quite similar to that observed in our cases, but I would not agree in describing the condition as liver-atrophy. The characteristic lesion in both the African cases and ours was degeneration of the liver cells surrounding the efferent vein, with pigment deposits in the degenerated cells, cellular infiltration in the region of the portal veins, and an excess of red blood cells in the region of the efferent vein.

Sir Arnold Theiler was unable to determine the cause of the development of staggers, but he advanced the theory that a plant toxin was the primary cause, with horse-sickness and the immunization of animals against horse-sickness as contributory factors. This theory is based on the similarity between staggers and acute *Senecio* poisoning.

The close parallel between staggers, as described by Sir Arnold Theiler, and the disease which occurred in the western states in the fall of 1936 helps to confirm the idea that this condition was not a phase of encephalomyelitis and that the administration of serum may have been a factor in producing the later losses in areas where the horses had been exposed to the virus of equine encephalomyelitis.

REFERENCE

[1]Marsh, Hadleigh: Losses of undetermined cause following an outbreak of equine encephalomyelitis. Jour., A. V. M. A., xcl (1937), n. s. 44 (1), pp. 88-93.

The smooth speeches of the wicked are full of treachey.—Phaedrus.

BRUCELLOSIS IN DOGS ASSOCIATED WITH BANG'S DISEASE IN DAIRY CATTLE*

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The occurrence of brucellosis in dogs and the presence of specific agglutinins for this infection has been reported by a number of investigators. Van Saceghem[1] demonstrated Brucella agglutinins in the sera of bitches in the Belgian Congo. He states that Kennedy had previously isolated a Brucella strain from the mesenteric ganglion of a dog. Feldman, Mann and Olson[2] found specific agglutinins in the sera of 10.4 per cent of dogs living on farms. Planz and Huddleson[3] isolated an organism which was identified as *Brucella suis*, from the abscessed testicle of a fox terrier. Davis[4] recently reported a case of testicular abscess in a dog with a serum titre of 1:2,000, but Brucella infection was not demonstrated.

The writer examined the material from two bitches that had been suspected of harboring Brucella infection. In both instances the question arose as to the possibility of these animals transmitting the infection to cattle.

CASE I

Subject: Grade English Bull female.

History: A vaginal discharge was observed about the middle of the gestation period. It was thought the animal had aborted. However, pregnancy was terminated normally with the delivery of two normal pups. The agglutination test of the dog's blood was reported positive for Brucella infection. The history of the dairy herd was as follows: The initial test was conducted on Feb. 13, 1935, and revealed 20 reactors out of 29 animals. The reactors were immediately disposed of and a thorough disinfection of the premises was made. April 23, 1935—Three additions

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to the herd were made. The additions were isolated and given two tests 60 days apart before entering the herd. Three reactors were found among eight of the original cattle, but these animals were not in contact with the remainder of the herd and were kept isolated following the results of the second test. June 6, 1935—Four more additions were made to the herd subject to the same procedure mentioned above. Sept. 11, 1935—A third test of the herd of 16 animals revealed three new reactors, two from the original herd and one addition that had passed two negative tests 60 days apart while in quarantine.

Since precautions had been taken to prevent further spread of infection following the removal of reactors, it was desired to ascertain the reason for the occurrence of new reactors. The bitch had shown a vaginal discharge between the second and third tests (June and September, 1935), and it was thought this animal was a possible source of infection in the herd.

Laboratory examination: The bitch was shipped to this laboratory on Dec. 11, 1935, about four months following whelping. The blood serum showed a maximum agglutinin titre of 1:100 with the standard Brucella antigen. There was no visible vaginal discharge. Guinea-pig inoculation of a vaginal swab did not reveal the presence of Brucella organisms. Autopsy was performed with no evidence of gross lesions. Direct cultures and guinea-pig inoculations of the heart-blood, lungs, spleen and the right uterine horn showed no Brucella infection. Cultures of the liver and kidneys were sterile. An organism was isolated from the left uterine horn which was identified as *Escherichia coli* (*communior*). The opsono-cytophagic power of the blood showed 60 per cent of the polymorphonuclear leukocytes markedly phagocytic for a Brucella strain. There was also a marked aggregation of Brucella organisms in association with the blood platelets.

CASE II

Subject: Pure bred Saint Bernard female.

History: The bitch had aborted at least two litters of pups. There was a high percentage of Bang's disease reactors in the herd. With the removal of the reactors and the herd having passed two successive negative tests, it was desired to prevent all possible chances of reinfection. The bitch was suspected of being a menace to the herd by spreading Brucella infection.

Laboratory examination: The only material obtained from the bitch was two vaginal swabs taken during estrum. Guinea-pig inoculations of this material did not show Brucella infection.

COMMENTS

Definite conclusions can not be drawn from these observations, but it would seem that dogs do not remain spreaders of Brucella infection for a considerable length of time. Pregnant bitches, however, could play a rôle in the transmission of brucellosis in a herd.

ACKNOWLEDGMENTS

The writer wishes to thank the following for their kind assistance and coöperation in making the observations recorded in this report: Drs. H. Busman, Edgar D. Wright and W. G. Galloway, of the U. S. Bureau of Animal Industry; and Dr. W. H. Lindley, of Lawrenceburg, Indiana.

REFERENCES

[1]Van Saceghem, R.: L'avortement epizootique des bovides propagé par le chien. Compt. Rend. Soc. Biol., xcvii (1927), p. 148.
[2]Feldman, W. H., Mann, F. C., and Olson, C.: The spontaneous occurrence of Brucella agglutinins in dogs. Jour. Inf. Dis., lvi (1935), pp. 55-63.
[3]Planz, J. F., and Huddleson, I. F.: Brucella infection in a dog. Jour. A. V. M. A., lxxix (1931), n. s. 32 (2), p. 251.
[4]Davis, C. L.: A clinical case of brucellosis in a dog. No. Amer. Vet., xviii (1937), 6, p. 48.

TO CONTROL HEMORRHAGE AFTER DEHORNING*

By G. LAMES, *Dysart, Iowa*

Several articles[1, 2] have appeared in recent issues of the JOURNAL on the subject of the control of hemorrhage after dehorning. Here is a method that has served me well. Take four hog-rings and place them at equal distances in the margin of the skin around the cut surface. Wrap a piece of binding twine around the rings and pull them together as tightly as is necessary to do the job.

REFERENCES

[1]A New Ligature for Use in Dehorning. Jour. A. V. M. A., xc (1937), n. s. 43 (6), pp. 784-785.
[2]Another Method of Controlling Hemorrhage in Dehorning. Jour. A. V. M. A., xci (1937), n. s. 44 (1), p. 98.

Farmer: "Did you say the horse was hurt in the woods?"
Doctor: "No, I said he was hurt in the lumbar region when the tree fell on him."

Life is not so short but that there is always time enough for courtesy.—*Emerson.*

*Received for publication, August 9, 1937.

STUDIES ON THE EFFECTS OF X-RAYS ON THE PATHOGENICITY OF EIMERIA TENELLA. Anthony A. Albanese and Hans Smetana. Amer. Jour. Hyg., xxvi (1937), p. 27.

Experimental infections with oöcysts of *Eimeria tenella* irradiated with x-rays of 9,000 r-units at 75 r/min was much less severe than that produced in controls. Exposure of oöcyts of *E. tenella* to x-rays of 13,500 or more r-units at 75 r/min rendered the organisms ineffective for experimental infection. Experimental infection with oöcysts exposed to x-rays of from 2,250 to 4,500 r-units at 75 r/min caused an increased production of organisms during the patent period, suggesting a stimulating action of these sublethal doses on the oöcysts. Experimental infection with oöcysts irradiated with low intensity x-rays of 4,500 or more r-units at 75 r/min was followed by a definite shortening of the patent period and a slight prolongation of the prepatent period; infection with oöcysts exposed to 2,250 r-units was characterized by a normal prepatent period and a prolonged patent period. Non-sporulated oöcysts were found to be 15 times more sensitive to x-rays than sporulated oöcysts. *In vitro* excystation of oöcysts irradiated with x-rays was greatly reduced as compared to that of non-irradiated controls.

ANTISEPTIC AND GERMICIDAL PROPERTIES OF A MIXTURE OF HIGH MOLECULAR ALKYL-DIMETHYL-BENZYL-AMMONIUM CHLORIDES. Cecil G. Dunn. Amer. Jour. Hyg., xxvi (1937), p. 46.

An organic compound consisting of a mixture of high molecular alkyl-dimethyl-benzyl-ammonium chlorides was found to possess high germidical efficacy towards the microörganisms studied, both in the presence and in the absence of organic matter. It is readily soluble in water and its aqueous solutions possess low surface tensions. Specificity of germicidal action has not been demonstrated to any marked degree. Spores of *Bacillus subtilis* were not destroyed as rapidly as vegetative cells by the new antiseptic. Similar results were found with other

antiseptics. Alkyl-dimethyl-benzyl-ammonium chlorides prevented the spores from germinating on account of their marked bacteriostatic action towards this organism. The compound was more rapid in its germicidal action against *B. subtilis* when its reaction was distinctly alkaiine rather than acid or neutral. Freezing, storage at 50° C. for 18 days, and storage at room temperature for over eight months caused no apparent losses in germicidal efficacy.

THE RETICULOCYTE RESPONSE IN ACUTE FATAL HOOKWORM ANEMIA. J. W. Landsberg. Amer. Jour. Hyg., xxvi (1937), p. 60.

A marked reticulocytosis develops during the progress of a fatal hookworm anemia in dogs. The anemia was found to be acute posthemorrhagic in character and was reproduced in other dogs along with a marked reticulocytosis by artificially induced hemorrhage. The presence of a reticulocytosis during the developing anemia rendered unlikely the theory of a myelotoxin inhibiting the activity of the bone-marrow, at least in acute hookworm disease. No evidence of hemolysis was observed in the blood of experiment animals during the development of the anemia. It was found that the bone-marrow was not permanently exhausted by the process of bleeding or by hookworm infestation, but that temporary exhaustion or the inability of the bone-marrow to compensate rapidly enough for the blood loss resulted in a fatal anemia.

OBSERVATIONS ON THE MODE OF ACTION OF SEVERAL ANTHELMINTICS UPON ASCARIS LUMBRICOIDES. Harold W. Brown. Amer. Jour. Hyg., xxvi (1937), p. 72.

Ascaris will ingest various solutions, such as normal saline and mineral oil. They will also ingest solutions of certain anthelmintics such as carbon tetrachloride in mineral oil. On the other hand they refuse to ingest mineral oil solutions of chenopodium even in very great dilution. The anthelmintics studied act more rapidly when Ascaris are immersed in solutions or suspensions of them than when such solutions are injected orally into the gastrointestinal tract of the parasite. From these experiments it would seem that the mode of action of these anthelmintics on Ascaris is through the body wall rather than after ingestion by the parasite. A delayed death results when a small portion of a worm is injured by an anthelmintic applied locally.

MYCOBACTERIUM TUBERCULOSIS IN THE AIR AND DUST. DETECTION BY A SIMPLE TECHNIQUE. George M. Eisenberg. Amer. Jour. Hyg. xxvi (1937), p. 138.

The author describes a simple method of collecting air and dust for the isolation of tubercle bacilli. Five per cent oxalic acid served as a digestant; its efficiency, however, was dependent upon the cleanliness of the environment. Culture media containing coal tar dyes were found to be more efficient than media without dyes. Petroff's medium containing alcoholic crystal violet (0.01 per cent) was more efficient than either Petragagni's medium containing aqueous brilliant green (0.1 per cent) or Corper-Uyei medium containing aqueous crystal violet (0.0015 per cent). Living virulent tubercle bacilli were present in the air and dust of tuberculosis environments.

TAPEWORM STUDIES. V. Absence of *M. expansa* from the sheep intestine early after infection. Normal R. Stoll. Amer. Jour. Hyg., xxvi (1937), p. 148.

Five experiments are reported in which closely related sheep and lambs were exposed in a *Moniezia expansa*-infested pasture. Animals exposed seven days, and then killed immediately, showed no tapeworms. Control animals, exposed on pasture with them, but subsequently held indoors several days before killing, were positive. Other control animals kept in the area showed, by later fecal examination, contraction of the infection referable to the test period. The earliest after initial exposure that an animal showed tapeworms at autopsy was nine days. The size of strobilae recovered from sheep killed twelve days or more after removal from an infested area was surprisingly small, when considered with the rapid growth of the cestodes in the intestine.

In contrast to results with *M. expansa*, tapeworms contracted by the ingestion of intermediate stages were recoverable as definitive forms from the intestine of the final host the first day or so after infection. These facts correlate with the hypothesis of a preliminary tissue invasive stage for *M. expansa* in sheep. The characteristic immunity which develops in sheep against *M. expansa* is likewise suggestive of a tissue invasive stage. Such immunities obtain against forms like *Taenia taeniaeformis* and *Taenia saginata* in their intermediate but not in their definitive hosts. Immunity also develops against *Hymenolepis fraterna*, which has both the intermediate and definitive stage in the same rat host.

BRUCELLA ABORTUS IN HORSES. A. W. Deem. Jour. Inf. Dis., lxi (1937), p. 21.

Abortus agglutination titres were determined on the blood-serums of 189 horses, and a record kept of the condition for which they were treated. Thirty-four of these had either fistulous withers or poll-evil or both. Twenty-eight of these 34 cases had positive reactions in serum dilutions of 1:50 or higher. Of the other 155 horses examined, 29 had positive tests in the same range of serum dilutions. Of 103 apparently normal horses in a field artillery unit, ten were positive for agglutinins in dilutions of 1:50 or 1:100; none higher. *Brucella abortus* was isolated in pure culture from nine of 15 samples of material obtained from as many previously unopened fistula cases and from one of two specimens of synovial fluid in other bursitis conditions.

STUDIES ON THE INFLUENCE OF SULFUR AND CERTAIN OF ITS COMPOUNDS ON THE GROWTH OF TUBERCLE BACILLUS. Randle C. Rosenberger and Louis Merves. Jour. Inf. Dis., lxi (1937), p. 69.

Flowers of sulfur exhibits an inhibitory influence on the growth of the tubercle bacillus; this inhibition is not evidenced by other acid-fast organisms. This inhibitory tendency varies with different strains of tubercle bacilli. Sodium thiosulfate and hydrogen sulfide in a concentration of 5 mg equivalent of sulfur per 100 cc of medium have no such effect. Calcium thiosulfate in minute concentration will likewise show this inhibitory influence and in greater concentrations prevented all growth of tubercle bacilli. This effect is not demonstrable in certain non-acid-fast-organims.

NORMAL BACTERIAL AGGLUTININS AND THEIR SIGNIFICANCE. Edwin O. Jordan. Jour. Inf. Dis., lxi (1937), p. 79.

Horse serum, cattle serum and, in a few tests, monkey serum contain notable amounts of agglutinins for various species of bacteria. The serum of other mammals (sheep, man) contains smaller amounts, while that of rabbits and guinea pigs has little agglutinative power. Different species of bacteria are agglutinated in various degrees. Those species readily agglutinated by bovine serum are also readily agglutinated by equine serum. Agglutinins for the typhoid bacillus appear to be present in normal cattle serum in greater abundance than agglutinins for *Salmonella aertrycke* and *Salmonella enteritidis*, both organisms

which might naturally be expected to infect cattle more frequently than the former. "Normal" bacterial agglutinins do not appear to differ from the immune agglutinins produced by inoculation either in specificity, as determined by the absorption test, or in heat resistance. A marked age difference exists in the amount of bacterial agglutinins; adult cattle serum possesses agglutinative power for many species, while the serum of calves is almost completely devoid of agglutinative activity. This is true not only for bacteria such as *Brucella* and *Salmonella*, which infect cattle naturally, but for the cholera vibrio and other organisms not usually forming a part of bovine environment.

METHOD OF TRANSMISSION OF IMMUNITY TO EQUINE ENCEPHALOMYELITIC VIRUS IN THE GUINEA PIG. Beatrice F. Howitt. Jour. Inf. Dis., lxi (1937), p. 88.

Young guinea pigs born of mothers immune to eastern and western American strains, respectively, of equine encephalomyelitis virus are themselves immune usually for at least a month after birth, if either weaned or unweaned. The young born of guinea pigs immune to a Russian strain of virus were found lacking in acquired tissue immunity. There is no change in immunity of the young born of immune parents (American strains) upon transfer to normal mothers, even though the transfer occurs the day of birth. Inversely, no normal young guinea pigs were immune after residing with immune mothers for at least a month. Adult and fetal serums of immune pregnant guinea pigs contain neutralizing substances to eastern and western American and Russian strains of virus, respectively, while the amniotic fluid from animals immune to the eastern and Russian but not to the western types gave positive neutralization. The virus penetrates the placental tissue of guinea pigs inoculated with the American varieties of virus but not the Russian, its presence in the fetus depending upon the time element. The infectiousness and general dissemination is greater for the eastern type than for the western type. Immunity for the American strains is transferred more probably to the young guinea pigs by way of the placenta rather than by the milk.

THE ACTION OF PRESERVATIVES AND SALTS ON BLACKLEG CULTURES. Joseph P. Scott. Jour. Inf. Dis., lxi (1937), p. 103.

Anaerobic organisms are more resistant to the action of disinfectants than are aerobic, spore-forming species. Proteolytic

anaerobes are much more resistant than the saccharolytic types and of these *Clostridium chauvei* is the least resistant. Iodine, metaphen and azamine did not sterilize any of the anaerobic organisms tested. Phenol and formaldehyde may be used for the rapid isolation of anaerobic organisms from spore-forming, aerobic bacteria. Formaldehyde, acetaldehyde and merthiolate, when added to blackleg filtrates and bacterins, increased the aggressive potency; phenol, chlor-picrin, phenyl mercury nitrate and the higher aldehydes had no such action. Sodium formate and sodium sulfite, added to culture mediums used in the production of blackleg filtrates, did not increase the potency of the product.

Sodium salicylate added to blackleg filtrates increased the aggressive potency. Potassium alum added to blackleg filtrates and bacterins produced a highly efficient immunizing agent for guinea pigs but did not greatly increase the aggressive activity of the product. The precipitate formed by the action of potassium alum on blackleg filtrates and bacterins contained almost the entire amount of antigenic and aggressive substances. Blackleg filtrates having an aggressive potency of 13 to 26 aggressive units reduced losses among vaccinated cattle to about one out of 10,000 head. Blackleg filtrates and bacterins having a potency of 30 to 130 units have reduced losses to less than one out of 20,000 vaccinated animals.

BIOCHEMICAL AND SEROLOGICAL CHARACTERISTICS OF STREPTOCOCCI OF BOVINE ORIGIN. Wayne N. Plastridge and Stanley E. Hartsell. Jour. Inf. Dis., lxi (1937), p. 110.

Weakly hemolytic streptococci obtained from freshly drawn milk samples were divided into the following three general groups on the basis of biochemical tests and the relation of the cultures to evidence of mastitis: (1) streptococci possessing the biochemical characteristics of *Streptococcus agalactiae*, (2) mannitol-fermenting streptococci associated with evidence of mastitis and (3) streptococci regarded as saprophytes. These three groups are serologically distinct.

Precipitin tests showed that all of the examined cultures which possessed the biochemical characters of S. *agalactiae* and which were obtained from animals with histories of permanent infection were serologically identical with Lancefield's group B. A limited number of cultures was observed which resembled *S. agalactiae* biochemically but differed serologically and by pro-

ducing infection, with or without evidence of mastitis, of relatively short duration.

The *S. agalactiae-like* cultures were tentatively designated as *S. pseudoagalactiae*. Five strongly hemolytic or beta cultures obtained from milk were identified by biochemical and serological tests as follows: one associated with an outbreak of septic sore throat as group A, one from an acute case of mastitis as *S. agalactiae* (Lancefield's group B type III), and two from pooled herd samples and one from an acute case of mastitis as group C. While biochemical tests are useful in placing streptococci of bovine origin in certain broad groups, the precipitin test is necessary for final identification.

Women's Auxiliaries Meet

The Women's Auxiliary of the Virginia State Veterinary Medical Association met in joint session with the Women's Auxiliary of the North Carolina State Veterinary Medical Association, at the Ocean Terrace Hotel, Wrightsville Beach, N. C., July 15-16, 1937.

A morning session of both auxiliaries was held on Thursday. The address of welcome was given by Mrs. R. P. Huffman, of Wilmington, N. C. Talks were given by Mrs. P. M. Graves, of Culpepper, Va., retiring president of the Virginia Auxiliary; Mrs. G. A. Ferguson, of Reidsville, N. C.; Mrs. P. C. McLain, of Charlotte, N. C.; Mrs. R. T. Gregory, of Fredericksburg, Va.; Mrs. W. F. Guard, of Columbus, Ohio, and Mrs. Ashe Lockhart, of Kansas City, Mo. These brief talks were followed by an open forum.

A banquet for both associations and their auxiliaries was held in the dining room of the hotel on Thursday evening. Dr. I. D. Wilson, Virginia Polytechnic Institute, Blacksburg, acted as toastmaster and Hon. John J. Burney, Solicitor, Eighth District, N. C., was the speaker.

The Women's Auxiliary of the Virginia Association elected the following officers at their business meeting on Friday morning: President, Mrs. R. T. Gregory, Fredericksburg; 1st vice-president, Mrs. A. J. Sipos, Richmond; 2nd vice-president, Mrs. H. R. Clemmer, Staunton; secretary, Mrs. Taylor P. Rowe, Richhond; assistant secretary, Mrs. H. E. Berry, Staunton; treasurer, Mrs. Peter F. Galloway, Richmond; assistant treasurer, Mrs. I. P. Gilberg, Courtland, and historian, Mrs. H. H. Rowe, Richmond.

MRS. R. E. BROOKBANK, *Reporter.*

THE PET MANUAL. J. M. Vernon, M. D. C. 64 pages, with 23 illustrations and 3 charts. The Pet Manual, Des Moines, Iowa, 1937. Paper, 50c.

The author, an eminent clinician of Des Moines, Iowa, onetime general practitioner who, with hundreds of others, took up the pet-animal clinic with the changing whirl, writes a booklet for the edification of lay readers, based upon the popular fallacies of the day as the philosophic mind sees them so commonly consecrated by the owners of pets.

The work is intended as wise counsel for the owner or prospective owner of dogs, cats, birds, ponies and other animals coming under the category of family pets. How to choose the right pet for the right place; how to feed, house and otherwise provide intelligent care; and the faulty notions commonly entertained about their medical treatment, qualify this literary effort for a place in every household where pets are possessed. Sensible instructions on breeding, raising pups, bathing, clipping and plucking, and muzzling are well stated. The rabies question is sensibly handled, as is also the trimming of ears for cosmetic purposes.

One section is devoted to dogs; one to cats; one to birds; one to ponies, goats and burros; and a final one on such miscellaneous pets as monkeys and deer. The final section tells of spaying, castration, mange, dentistry, parasites, shipping, euthanesia, and a long group of "don'ts" that make delightful reading. The charts on feed, breeding information, and teething contain excellent hints and reminders for any veterinarian.

The booklet throughout is a true picture of how pets and their owners impress the minds of a matter-of-fact professional man who knows the merits and the faults of both. A quotation from the paragraph on vivisection is perhaps the best proof of the philosophical character of the text. It reads: "If these practices do not in some way contribute to the welfare of mankind, they will not live; if they do, they cannot be destroyed."

L. A. M.

PUBLICATIONS RECEIVED

A Simple Apparatus for Testing for Hydrogen Sulphide Production. E. M. Pullar and E. H. Fellow. Reprint from *Jour. Path. & Bact.*, xlii (1936), 2, pp. 513-514.

Curdled Blood. A simply prepared fluid medium for the cultivation of anaerobes. E. M. Pullar. Reprint from *Jour. Bact.*, xxxii (1936), 2, pp. 131-133.

The Immunizing Value of Commercial Hemorrhagic Septicemia Aggressins. L. Van Es and J. F. Olney. (Res. Bul. 87. Neb. Agr. Exp. Sta., Nov., 1936. pp. 16.)

The Etiology of Fowl Paralysis, Leukemia and Allied Conditions in Animals. VII.—Hemocytoblastosis in Chickens as Induced by *Salmonella aertrycke*. VIII.—Hemocytoblastosis in Naturally Occurring Cases of Fowl Paralysis and Lymphomatosis, as well as in Other Birds from the Same Flock. M. W. Emmel. (Tech. Bul. 306. Fla. Agr. Exp. Sta., Dec., 1936. pp. 42.)

New York State Veterinary College at Cornell University, 1935-1936, Report of the. (Ithaca, N. Y., 1937, pp. 174.)

Michigan State College and Applied Science. Division of Veterinary Science, 1935-1936, Report of the. (East Lansing, Mich., 1936. pp. 56.)

Kansas State College Bulletin. (Catalog number, 74th session, 1936-1937. Announcements for session, 1937-1938. Jan., 1937. pp. 334.)

Vulvovaginitis of Swine. E. M. Pullar and W. M. Lereu. Reprint from *Australian Vet. Jour.*, 1937. pp. 28-30.

National Research Council, 1935-1936, Report of the. (Washington, D. C., 1937. pp. 88.)

Sheep Scab: Remedial Measures Reviewed. E. A. Lewis. Reprint from *Bul. Entomol. Res.*, xxviii (1937), 1, pp. 11-28. Illus.

Ohio State University Bulletin. College of Veterinary Medicine, 1937-1938. (Columbus, Ohio, 1937. pp. 48.)

Colorado State College Bulletin. Catalog Number, 1937-1938. (Fort Collins, Colo., 1937. pp. 181. Illus.)

Rockefeller Foundation, The. A Review for 1936. Raymond B. Fosdick, President. (New York, N. Y., 1937. pp. 58. Illus.)

Alabama Polytechnic Institute. Catalog 1936-1937 and Announcements for 1937-1938. (Auburn, Ala., 1937. pp. 308.)

Trapping and Transplanting Live Beavers. (Farmers' Bul. 1768. U. S. Dept of Agr., Washington, D. C., March, 1937. pp. 18. Illus. Price 5c.)

Michigan State College of Agriculture and Applied Science. Catalog Number for 1936-1937 and Announcements for 1937-1938. (East Lansing, Mich., 1937. pp. 244.)

Internal Parasites of Poultry. Robert Graham, J. P. Torrey, J. D. Mizelle, and Viola M. Michael. (Cir. 469. Ill. Agr. Exp. Sta., Mar., 1937. pp. 50. Illus.)

The Evolution of a Sanitary Type of a Chick Feeder. L. Van Es and J. F. Olney. (Bul. 306. Neb. Agr. Exp. Sta., Mar., 1937. pp. 14. Illus.)

Ontario Veterinary College, 1937-1938, The Calendar of the. (Guelph, Ontario, Canada, 1937. pp. 47.)

Regular Army

The promotion of each of the following-named officers to the grade of captain with rank from July 2, 1937, is announced.

1st Lieut. William E. Jennings
1st Lieut. Curtis W. Betzold

The promotion of Major Stanley C. Smock to the grade of lieutenant colonel with rank from July 16, 1937, is announced.

1st Lieut. Velner W. McGinnis is directed to proceed to Camp Perry, Ohio, and report not later than August 1, 1937, to the Executive Officer, National Matches, for temporary duty in connection with the Matches, and upon completion of this duty to return to his proper station, Washington, D. C.

Veterinary Reserve Corps

PROMOTIONS

To

Earhart, Robert Nixon	Capt.	342 W. 9th Ave.,	Columbus, Ohio
Richey, Alfred Newton	Capt.	Lanesboro,	Iowa.
Treat, Lester Albert	Capt.	114 Mill St.,	Bennington, Vt.
Carter, Thomas Byron	Major	Gresham,	Ore.
Gibson, Bernard Harrison	1st Lt.	RFD No. 5,	Newark, Ohio

NEW ACCEPTANCES

Anderson, Everett Theodore	1st Lt.	Robert Fulton Hotel,	Atlanta, Ga.
Caswell, Don Leroy	1st Lt.	1209 Curtiss Ave.,	Ames, Iowa.
Cohen, George	1st Lt.	25 Cass St.,	Springfield, Mass.
Gathmann, Raymond Albert	1st Lt.	Robert Fulton Hotel,	Atlanta, Ga.
Moses, Clyde Robert	1st Lt.	Auburn,	Ala.
Roberts, Charles Speer	1st Lt.	Gold Hill,	Ala.
Alcorn, Linden Moore	1st Lt.	607 State St.,	Guthrie Center, Ia.
Allison, Aaron Francis	1st Lt.	Rural Route,	Olathe, Kan.
Arnold, John Jacob	1st Lt.	Stilesville,	Ind.
Barr, Theodore Maurice	1st Lt.	9275 Riviera Ave.,	Dertoit, Mich.
Bayles, Guy William	1st Lt.	238 E. Reynolds St.,	Newton, Ill.
Bertotti, Richard Domanic	1st Lt.	St. Charles,	Mich.
Bowstead, Leonard Allen	1st Lt.	709 11th Ave.,	DeWitt, Ia.
Boydston, James Leroy	1st Lt.	926 E. Grand River Ave.,	East Lansing, Mich.
Brenny, Raymond Nicholas	1st Lt.	Foley,	Minn.
Brown, William Everett	1st Lt.	Paullina,	Iowa.
Burch, Clark Wayne	1st Lt.	1201 A Moro St.,	Manhattan, Kan.
Butler, Lucius Nelson, Jr.	1st Lt.	Route 5, Box 525,	Phoeniz, Ariz.
Cordy, Donald Rolfe	1st Lt.	209½ Cookacre,	Compton, Calif.
Dykstra, Lewis Albert	1st Lt.	Route 3,	Monroe, Iowa.

Garner, Paul Cecil.....1st Lt...Route 3, Chetek, Wis.
Hand, Pearl Hugh.....1st Lt...Salt Fort, Okla.
Hanna, Charles Gaylord.....1st Lt...1093 10th St., Marion, Iowa.
Harriman, Henry Everett...1st Lt...Kanawha, Iowa.
Harrison, Earl Hester.....1st Lt...2109 Vermont St., Lawrence, Kan.
Hayes, Isaac Edward.....1st Lt...East Canal St., Newcomerstown, Ohio
Hemphill, John Graham....1st Lt...1132 S. Central, Chanute, Kan.
Henshaw, Milo Jerome.....1st Lt...417 E. Grand River Ave., East Lansing, Mich.
Henshaw, Russell Joseph....1st Lt...417 E. Grand River Ave., East Lansing, Mich.
Hervey, William Hugh.....1st Lt...R.F.D. No. 1, Belle Plaine, Kan.
Irwin, Irvin Preston.....1st Lt...Rural Route, Wilsey, Kan.
Ketchersid, James Randle...1st Lt...Hope, Kan.
Lang, George Kendrick.....1st Lt...434 Collier St., Longmont, Colo.
Madison, Russell Martin...1st Lt...Slayton, Minn.
Minsky, Lawrence.....1st Lt...2763 W. Valley Blvd., El Monte, Calif.
Omohundro, Richard Eugene.1st Lt...724 E. Harvey Ave., Wellington, Kan.
Railsback, Lee Thomas.....1st Lt...Route 1, Langdon, Kan.
Raven, Howard Charles....1st Lt...304 Broad St., Meridan, Conn.
Robinson, Charles Edwin...1st Lt...412 Bluemont, Manhattan, Kan.
Rosenfeld, Benjamin .....1st Lt...40 Monroe St., B-C-6, New York, N. Y.
Ruhland, Hans Herman....1st Lt...1004 Cleo St., Lansing, Mich.
Schubert, Carl John.....1st Lt...R.R.1, Slinger, Wis.
Sinkler, Benjamin Joseph C..1st Lt...Baxter, Iowa.
Thurber, Warren Bixby....1st Lt...19 2nd St., S. W., Rochester, Minn.
Twiehaus, Irwin John.....1st Lt...Route No. 5, Independence, Mo.
Van Sant, Willard Merrill...1st Lt...Dixon, Calif.
Wilson, George Miner.....1st Lt...317 South 6th St., Alhambra, Calif.
Winchester, Ben Newhouse..1stLt...1 E. Univ. Parkway, Baltimore, Md.
Wingerter, Alvin Ronald....1st Lt...525 Isbel St., Lansing, Mich.
Wueliner, Earl John.....1st Lt...1216 Stephenson Ave., Menominee, Mich.
Thaxton, Hugh Barber.....1st Lt...College Station, Texas.
Akins, Everett Horton.....1st Lt...Lost Nation Road, Willoughby, O.
Buckley, Howard Powers...1st Lt...24 Tiona Ave., Belleville, N. J.
Christofferson, F. F.....1st Lt...Route 4, Mount Vernon, Wash.
Copple, Ernest Donald.....1st Lt...Okanogan, Wash.
Cranfield, John Glynn.....1st Lt...618 Euclid Ave., Santa Monica, Calif.
Dingwall, Stuart MacKenzie.1st Lt...6239 Sycamore Ave., Seattle, Wash.
Erickson, Kenneth .....1st Lt...Hanley Falls, Minn.
Fisher, LeRoy Tenny.....1st Lt...240 S. Husband St., Stillwater, Okla.
Folger, George Chase.. .. ..1st Lt...8821 Aurora, Seattle, Wash.
Gould, Clinton Leslie.....1st Lt...Hydesville, Calif.
Helwig, John Harry.....1st Lt...870 Colburn St., Toledo, Ohio.
House, Donald Dean.....1st Lt...611 E. 62nd St., Tacoma, Wash.
Jackson, Wilfred, Clinton...1st Lt...117 W. Southern Ave., Bucyrus, Ohio.
Keefer, Wesley Orville.....1st Lt...50 E. Buchtel Ave., Akron, Ohio.
Ledgerwood, Marion Lane..1st Lt...1101 North St., Seattle, Wash.

Lord, Willys Edward.....1st Lt...119½ North Fifth St., Breckenridge, Minn.
McClave, Philip Lonie.....1st Lt...Box 125, Fort Lupton, Colo.
McIntyre, James Clayton...1st Lt...225 West Oak St., Fort Collins, Colo.
Maher, Louis John.....1st Lt...106 N. 5th Ave., Highland Park, N. J.
Marlowe, Hilding Mauritz..1st Lt...Box 255, Kent, Wash.
Marsh, Edward Thomas.....1st Lt...521 S. Madison St., Waupun, Wis.
Montgomery, Otto Leo.....1st Lt...Route 1, Lafayette, Colo.
Mottram, William Ernest...1st Lt...355 Fair Oaks St., San Francisco, Calif.
Pang, Wilson Munn.....1st Lt...2200 Star Road, Honolulu, Hawaii
Paul, Emmet William.....1st Lt...736 Page St., San Francisco, Calif.
Payen, Louis Joseph.....1st Lt...P. O. Box 256, Folsom City, Calif.
Poley, Linn Swartley.....1st Lt...2414 N. Nevada Ave., Colorado Springs, Colo.
Pundt, Werner.....1st Lt...277 Edgewood Ave., San Francisco., Calif.
Russ, Robert Samuel.....1st Lt...1011 S. Steele, Tacoma, Wash.
Sheetz, Harold Oscar.....1st Lt...Box 266, Woodstock, Va.
Taylor, Albert Andrew.....1st Lt...630 11th St., Arcata, Calif.
Vandeven, John William....1st Lt...32 14th Ave., Columbus, Ohio.
Watson, Edward James.....1st Lt...124 A North Grand, San Pedro, Calif.
Wheelin, Thomas Joseph....1st Lt...175 S Stone St., Tucson, Ariz.
Brennan, James Alan.....1st Lt...94 N. Transit Road, Lockport, N. Y.
Dragotta, Salvatore M.....1st Lt...Box 396, Marlboro, N. Y.
Glassman, Albert Nathan..1st Lt...170 Adams St., Hartford, Conn.
Hughes, Donald Vincent....1st Lt...S. Plant Road, Middletown, N. Y.
Levinson, Abraham Alan.. 1st Lt...214 Broome St., New York, N. Y.
Pyles, Ray Sherman.....1st Lt...1952 N. 16th St., Kansas City, Kan.
Racoff, Herbert .....1st Lt...1800 Davison Ave., Bronx, N. Y.
Redman, Ward Dallas.....1st Lt...Avoca, Iowa.
Siegel, Morris .....1st Lt...Old Nyack Turnpike, Spring Valley, N. Y.
Tax, Herman .....1st Lt...285 Quincy St., Brooklyn, N. Y.
Lacroix, Leon Jules.....1st Lt...1817 Church St., Evanston, Ill.
All, Albert Louis.....1st Lt...Hobart, N. Y.
Barry, Francis Arthur.....1st Lt...Constable, N. Y.
Eder, Arnold .....1st Lt...31-73 Steinway St., Astoria, N. Y.
Flanigan, Jean Alpheus.....1st Lt...739 High St., Eugene, Ore.
Francis, Elwood Stephen....1st Lt...83 Manchester Pl., Buffalo, N. Y.
Grodin, Irving .....1st Lt...711 Bushwick Ave., Brooklyn, N. Y.
Hickey, Thomas Edmund..1st Lt...14 Frost Road, Hewlett, N. Y.
Hoag, Oby Jared.....1st Lt...Smithville Flats, N. Y.
Johnson, Norman Henry....1st Lt...22 Lincoln St., Beacon, N. Y.
Lavitan, Murray Jack.....1st Lt...1840 Prospect Pl., Brooklyn, N.Y.
Lutvack, Harry Aaron.....1st Lt...2194 Barnes Ave., New York, N.Y.
Nolan, Alfred Francis.....1st Lt...116 Cook St., Ithaca, N. Y.
Pickett, George Greenwood.1st Lt...113 Lake St., Ithaca, N. Y.
Schloemer, George Conrad..1st Lt...2138 Gleason Ave., Bronx, N. Y.
Shindell, Max Martin.....1st Lt...1085 E. 22nd St., Brooklyn, N. Y.
Stieber, Sam .....1st Lt...1690 Clay Ave., New York, N. Y.
Van Wagenen, Victor Frost.1st Lt...Wallkill, N. Y.

Baker, Jack Edward	1st Lt.	717 Penrith Drive, Los Angeles, Calif.
Bruner, Dorsey William	1st Lt.	Paxtonville, Pa.
Koch, Emil Laurence	1st Lt.	Nashua, Iowa
Sarasohn, Jay Jewell	1st Lt.	5791 Westminster Pl., St. Louis, Mo.
Greenfield, Alexander	1st Lt.	432 Hopkinson Ave., Brooklyn, N. Y.
Kennedy, Charles Eric	1st Lt.	127 Florence Pl., Mobile, Ala.

NEW ASSIGNMENTS TO ACTIVE DUTY WITH CCC

Cohen, George	1st Lt.	Hq. 1st C.A., Boston, Mass.
Omohundro, Richard E.	1st Lt.	Hq. 3rd C.A., Baltimore, Md.
Winchester, Ben Newhouse	1st Lt.	Hq. 3rd C.A., Baltimore, Md.
Anderson, Everett	1st Lt.	Hq. 4th C.A., Atlanta, Ga.
Gathmann, Raymond	1st Lt.	Hq. 4th C.A., Atlanta, Ga.
Emerson, Harry H.	Capt.	Chicago Q.M. Depot, Chicago, Ill.
Merchant, Willard R.	1st Lt.	Chicago Q.M. Depot, Chicago, Ill.
Van Sant, Willard M.	1st Lt.	Pres. of San Francisco, Calif.

TERMINATION OF ASSIGNMENT TO ACTIVE DUTY

Morse, Joseph Ben	1st Lt.	Hq. Dist. 3, CCC, Towson, Md.
Phillips, Harry L.	1st Lt.	Fort H. G. Wright, N. Y.

Bureau Transfers

DR. FLOYD C. AKIN (Chi. '11), from Oklahoma City, Okla., to Fort Worth, Texas, on meat inspection.

DR. DONALD R. APPEL (Cin. '20), from Atlanta, Ga., to Montgomery, Ala., on tuberculosis eradication.

DR. LEO F. BARTHELME (Ont. '27), from Chicago, Ill., to Topeka, Kan., on meat inspection.

DR. FRANCIS P. BURKE (K. C. V. C. '10), from Chicago, Ill., to Seattle, Wash., on meat inspection.

DR. JOHN T. DALLAS (O. S. U. '06), from Boise, Idaho, to Salt Lake City, Utah, on tuberculosis eradication.

DR. AARON R. GRIFFITH (A. P. I. '31), from Cleveland, Ohio, to Moultrie, Ga., on meat inspection.

DR. LYNN H. MEAD (Corn. '14), from Saint Louis, Mo., to Providence, R. I., on meat inspection.

DR. ROSWELL A. TELFORD (St. Jos. '17), from Saint Joseph, Mo., to Des Moines, Iowa, on meat inspection.

DR. ALBERT W. VORNHEDER (Cin. '14), from Montgmery, Ala., to Atlanta, Ga., on tuberculosis eradication.

DR. JOHN W. WELNHOFER (Iowa '30), from Seattle, Wash., to Chicago, Ill., on meat inspection.

DR. HILBORN H. GROAT (K. S. C. '21), from Topeka, Kan., to Denver, Colo., on meat inspection.

DR. WM M. HOBDY (A. P. I. '11), from South Omaha, Neb., to Fort Worth, Tex., on meat inspection.

DR. L. S. SMITH (Colo. '18), from South Saint Paul, Minn., to El Paso, Texas, on meat inspection.

NORTHEASTERN CONFERENCE OF LABORATORY WORKERS IN PULLORUM DISEASE ERADICATION

The tenth annual meeting of the Northeastern Conference of Laboratory Workers in Pullorum Disease Eradication was held at the University of Maine, Orono, June 23-26, 1937. The following states were represented: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia, as well as the provinces of Ontario and Quebec, Canada.

Papers and discussions dealing with the following subjects were presented:

Ten Years' Observation of Factors Which Influence Pullorum Disease Eradication.
The Value of Necropsy and Bacteriological Examinations as a Supplement to the Agglutination Test for the Diagnosis of Pullorum Disease.
Experimental Transmission of Fowl Paralysis.
The Isolation of the Erysipelas Organism from Disease Outbreaks in Adult Turkey Flocks.

Comparative tests of antigens submitted by the various representatives indicated a remarkable uniformity in turbidity, pH, and sensitivity. The gratifying results emphasize the soundness of the policy of the conference in insisting upon a uniform technic in the preparation and standardization of the antigens used in the pullorum disease eradication program.

A summary of the data pertaining to the testing program during the year 1936-37 submitted by the 16 states in the conference showed that 3,370,000 birds had been tested during the past year. The reaction in the various states ranged from .07 per cent to 7.9 per cent. The number designated as pullorum clean on the basis of the tests was 952,000 birds.

The annual dinner was given with the compliments of the College of Agriculture, University of Maine, at which Dr. A. A. Hauck, president of the University, was the speaker.

E. R. HITCHNER, *Reporter.*

KENTUCKY VETERINARY MEDICAL ASSOCIATION

The twenty-sixth annual meeting of the Kentucky Veterinary Medical Association was held at the Brown Hotel, Louisville, July 14-15, 1937. Despite the warm weather the meeting was well attended by veterinarians from all parts of the state, including quite a number of new members, as well as visitors from neighboring states.

The following papers were given:

"Rabies," by Dr. T. P. Polk, of the University of Kentucky, Lexington.
"Intravenous Medication," by Drs. D. L. Proctor and A. J. Steiner, both of Lexington.
"Nephritis in Dairy Cattle," by Dr. H. J. Metzger, of the University of Kentucky, Lexington.
"Breeding Efficiency in Dairy Cattle," by Dr. F. E. Hull, of the University of Kentucky, Lexington.
"Vitamins," by Dr. E. E. Clore, of Greenwood, Ind.
"Black Tongue in Dogs," by Dr. E. M. Lang, of Louisville.
"Periodic Ophthalmia," by Dr. W. W. Dimock, of the University of Kentucky, Lexington.

Each paper was discussed at considerable length. A dinner followed the program on the evening of the first day. All present enjoyed themselves, as is the usual custom when Kentucky veterinarians get together.

The following officers were elected for the ensuing year: President, Dr. E. A. Caslick, of Paris; 1st vice-president, Dr. D. L. Proctor, of Lexington; 2nd vice-president, Dr. Frank Hare, of Lexington; secretary-treasurer, Dr. F. H. Reister, Buechel, and new member of the Executive Committee, Dr. J. A. Winkler, of Newport.

FRANK HARE, *Secretary-Treasurer.*

WESTERN NEW YORK VETERINARY MEDICAL ASSOCIATION

The twenty-fourth semi-annual meeting of the Western New York Veterinary Medical Association was held at Willow Brook Farm, the summer home of Dr. Frank L. Stein, at Webster, N. Y., July 20, 1937. There was an unusually large attendance as this was the first meeting held since the Western New York Veterinary Medical Association and the Genesee Valley Veterinary Medical Association were combined.

The clinic was held in the early part of the afternoon on the lawn and consisted of the castration of a cryptorchid colt, by Dr. J. L. Wilder, of Akron, N. Y.; hysterectomy in a bitch with pyometra; tonsillectomy in a dog, and oöphorectomy in a bitch, all operated on by Dr. Ray L. Wilkinson, of Kenmore, N. Y. Numerous other cases were presented for consultation, observation and diagnosis.

A short business session was held late in the afternoon and after a sumptuous repast at the Blarney Stone Inn, the evening was devoted to addresses, papers and moving pictures. Dr. M. G. Fincher, of the New York State Veterinary College, gave a most interesting and instructive talk on "The Breeding and Foaling of Mares and the Care of Foals." Dr. Oliver S. McCoy, of the University of Rochester, presented a constructive paper on parasites of animals, dealing particularly with the ascarids. Moving pictures were shown, depicting the skin lesions of smallpox in an outbreak at Dansville, N. Y., last year, and also the breeding and development of mosquitoes and their mode of spreading infection. During the afternoon the ladies were entertained on the beautiful lawn by Mrs. Stein.

F. F. FEHR, *Secretary-Treasurer.*

ONTARIO VETERINARY ASSOCIATION AND CENTRAL CANADA VETERINARY ASSOCIATION

The combined meeting of the Ontario Veterinary Association and the Central Canada Veterinary Association was held at the Hotel London, London, Ont., July 22-23, 1937.

Dr. A. R. Younie, of Saint Catherines, Ont., opened the first day of the meeting with the President's address. The reports of the committees were heard and the following literary program was given:

"Trichinosis—A Public Health Problem" (illustrated), by Prof. T. W. M. Cameron, McGill University, Toronto, Ont.

"Acute Dilatation of the Stomach and Differential Diagnosis and Treatment in the Horse," by Dr. C. M. Higginson, Hawkesbury, Ont.

"Priesz-Nocard Infection" (illustrated), by Dr. C. H. Mitchell, Animal Disease Research Institute, Hull, Que.

A dinner was held in the evening of the first day with Dr. D. M. Robertson, of Brockville, president of the Central Canada Veterinary Association, acting as chairman. The address of

welcome was given by Mayor I. F. Kingsmill, and the guest speaker was Dr. D. S. Tamblyn, University of Western Ontario. Following the dinner, a portrait of the late Dr. E. A. A. Grange, past principal of the Ontario Veterinary College, was presented to that institution as a memorial.

A very lively clinic took place at the Agricultural Fair Grounds on the second day, with a number of prominent veterinarians participating. Dr. A. A. Kingscote showed how to detect common parasite eggs and explained the routine examination of seminal fluid; Dr. H. R. Potter, of Stamford Centre, gave a demonstration of stomach-tube technic in the horse; Dr. George Cairns, of Toronto, covered anesthetics in the horse; Dr. R. A. McIntosh, of the Ontario Veterinary College, showed how to examine the udder for mastitis. Dr. V. R. Brown, also of the Ontario Veterinary College, gave a demonstration of the anatomical structure of the udder; Dr. R. Gwatkin, of Toronto, covered the bacteriological diagnosis of mastitis; Dr. F. Cote, of Guelph, explained some measures of sanitation and control in handling mastitis, and Dr. D. M. Robertson, of Brockville, Ont., showed the method of drawing blood for serological examination.

In the small-animal clinic, Dr. Alan Second, of Toronto, demonstrated the diagnosis and treatment of fractures; Dr. R. L. Mummery, of Hamilton, Ont., had intravenous medication as his subject, and Dr. J. A. Campbell, of Toronto, presented operative technic and anesthesia.

W. MOYNIHAN, *Reporter.*

WESTERN MICHIGAN VETERINARY MEDICAL ASSOCIATION

The seventh annual summer clinic of the Western Michigan Veterinary Medical Association was held at the Ionia Fair Grounds, Ionia, July 29, 1937. This clinic was held in honor of those veterinarians who have been in the profession for 30 years or more. The attendance was over 100, from five different states. Dr. Herman Dykema, of Muskegon, presided at the meeting.

Drs. B. A. Perry, of Hastings; J. W. G. Hansen, of Greenville; W. H. Ferguson, of Ionia, and G. H. Scoville, of Clarksville, were in charge of the large-animal section; Drs. H. Dykema, Muskegon, and H. H. Clark, of Lansing, directed the small-animal section, and Dr. Robert Veenstra, Grand Rapids, the laboratory section.

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The committees and visiting veterinarians carried out a well arranged demonstration of surgical operations and diagnostic procedures, which constituted a good post-graduate course for the large number of intensely interested veterinarians present.

At the business session, it was decided to establish a Committee on Public Relations to coöperate with a like committee of the Michigan State Veterinary Medical Association.

The Ladies' Auxiliary served a dinner to members and visitors in a grove on the banks of the Grand River near the clinical arena.

CHAS. HAASJES, *Secretary.*

NORTHWESTERN OHIO VETERINARY MEDICAL ASSOCIATION

The summer meeting of the Northwestern Ohio Veterinary Medical Association was held in the Elks' Club, in Findlay, Ohio, on July 27, 1937, with Dr. J. W. Marshall, of Genoa, presiding. About 100 veterinarians were present.

The following program was carried out:

"Veterinary Fees and Professional Ethics," by Dr. N. D. Backus, Elyria.
"Small Animal Practice," by Dr. H. E. Myers, Lakewood.
"Intra-ocular Method of Evacuating a Dog's Stomach," by Dr. N. D. Backus.
"Control of Infectious Abortion," by Dr. Eugene Ingmand, Zionsville, Ind.

Interesting discussions followed each talk and paper. Suitable entertainment was provided for the ladies during the meeting.

C. W. WITTY, *Secretary.*

Hobble for Cow

To overcome the possibility of being kicked by a cow when working about the hind legs, much danger may be eliminated by buckling a hame-strap tightly around the hind leg on the side opposite to that on which the work is to be done. Then by holding the tail over the back, surgery on the teats or udder may be performed without hindrance. Very few cows raise the free leg, so one need not fear being kicked with that leg. The animal can kick with the hobbled leg, but she cannot reach the operator. Such a method of restraint is preferable to the nose-pincers and the old-fashioned, metal hobbles.

NECROLOGY

JOHN MARTIN ESHLEMAN

Dr. John M. Eshleman, of Pomona, Calif., died May 30, 1937. He had been a resident of Pomona since about 1928.

Born at Cochranville, Pa., November 28, 1865, Dr. Eshleman was graduated from the University of Pennsylvania in 1890. He practiced at Parkesburg, Pa., until he entered military service in 1917. He was commissioned as second lieutenant in the Veterinary Corps, July 17, 1917, and assigned to duty with the 28th Division at Camp Hancock, Ga., the following month. He was promoted to the rank of captain, November 12, 1917, and the following June was directed to proceed to Camp Greenleaf, Ga., for a course of instruction. The following month, he was directed to report to the Veterinary Training School at Camp Lee, Va., and was assigned to Veterinary Replacement Unit No. 2. Following his discharge in 1920, Dr. Eshleman located at Steilacoom, Wash., where he remained for about eight years.

Dr. Eshleman joined he A. V. M. A. in 1918. He was a member of the Keystone Lodge of Masons, in Parkesburg, Pa., and the Royal Arch and Commandery, at Pomona, Calif. He is survived by his widow (née Anna B. Smith) and four sons.

H. C. S.

ELLIOTT PETERSON

Dr. Elliott Peterson, of San Antonio, Texas, died suddenly at his home on May 30, 1937, from coronary thrombosis. He had been in good health up until the time of his death.

Born at Colman, S. Dak., July 22, 1892, Dr. Peterson attended local schools and then took one year (1912-1913) of work at Grandview College, in Des Moines, Iowa. In 1916, he enrolled at the Kansas City Veterinary College and spent two years in that institution. He then transferred to the Chicago Veterinary College and spent a year there. Then, after remaining out of school for one year, he entered the Indiana Veterinary College and received his degree in 1921.

From 1921 to 1929, Dr. Peterson practiced at Tripp, S. Dak., and then for two years at Dell Rapids, same state. In 1931, he moved to Vinita, Okla., where he practiced for two years and then spent three years in tuberculosis eradication work. For a few months during 1936, he was associated with Dr. H. W. Ayer, at Oklahoma City. He then moved to San Antonio where he conducted the Blue Cross Dog and Cat Hospital.

Dr. Peterson joined the A. V. M. A. in 1935. He was a member of the Oklahoma Veterinary Medical Association and the Twelfth International Veterinary Congress. Dr. Peterson was married twice and is survived by two sons and a daughter by his first marriage and an infant son by his second marriage.

W. A. L.

MAJOR HENRY WILSON PETER

Major Henry Wilson Peter, V. C., U. S. A., retired, died at Allentown, Pa., on June 18, 1937.

Born at Saegersville, Pa., June 5, 1872, Major Peter was graduated from the American Veterinary College, New York City, in 1896. He was appointed veterinarian to the 14th Cavalry, February 3, 1902, and saw service on the Mexican border, in the Philippines, and in France during the World War. His last duty was at Camp Lee, Va. He was placed on the retired list, December 31, 1922.

HARRY TAGGERT JOHNSTON

Dr. Harry T. Johnston, of New London, Conn., died suddenly on July 2, 1937.

Born in Washington, Conn., April 15, 1889, Dr. Johnston studied veterinary medicine at the University of Pennsylvania. He was graduated in 1913 and had practiced in Connecticut ever since his graduation.

Dr. Johnston was a member of the Connecticut Veterinary Medical Association. He is survived by one son, his mother and two brothers. Interment was at his former home, Washington, Conn.

G. E. C.

A. H. KRULL

Dr. A. H. Krull, of Wakefield, Neb., died on June 24, 1937. He was a graduate of the Grand Rapids Veterinary College, class of 1903, and had been engaged in general practice.

CAPT. LESTER E. WILLYOUNG

Capt. Lester E. Willyoung, V. C., U. S. A., retired, died at Princeton, W. Va., July 11, 1937.

Born in Bowmanville, N. Y., December 10, 1869, Capt. Willyoung attended McGill University, Montreal, and was graduated in 1890. From January, 1903, to January, 1917, Capt. Willyoung served as veterinarian in the U. S. Army. On January 17, 1917, he was retired with the rank of first lieutenant in the Veterinary Corps. In May of the same year, he was called to active duty and promoted to the rank of captain. He was ordered to report at the Quartermaster Depot, Chicago, Ill., February 16, 1918, as meat inspector and was returned to the retired list on March 3, 1919.

Capt. Willyoung joined the A. V. M. A. in 1904 and retained his membership until 1931, when he resigned. He is survived by his widow. Burial was at Arlington Cemetery, on July 13, with full military honors.

WILLIAM ALEXANDER ATTFIELD

Dr. William A. Attfield, of Lynbrook, Long Island, N. Y., died at his home, July 15, 1937, after an illness of more than two years. He was a graduate of the American Veterinary College, New York City, class of 1893, and had practiced at Lynbrook for about 30 years.

Dr. Attfield joined the A. V. M. A. in 1893. He is survived by his widow and one son.

JOHN BAIRD

An illness which had its inception during the fall of 1936 resulted in the death of Dr. John Baird, at Saint Joseph's Hospital, Lexington, Ky., on July 26, 1937. He had suffered a collapse during the Keeneland meeting, last October, and never regained his health.

Born at East Kilbridge, Scotland, July 1, 1878, Dr. Baird was graduated from the Glasgow Veterinary College in 1900, and gained distinction in his field before he came to the United States, in 1927, to establish a Thoroughbred stud for the late Sylvester W. Labrot, at Holly Beach Farm, Annapolis, Md. In September, 1929, he became manager of C. B. Shaffer's Coldstream Stud, at Lexington, a position he held until the loss of his physical and mental health forced his retirement from active service.

Under the direction of Dr. Baird, Coldstream Stud assumed a place as one of the most important Thoroughbred nurseries in America, and he was largely responsible for the importation of Bull Dog, a horse which now ranks as one of the country's most successful sires.

Dr. Baird joined the A. V. M. A. in 1932. He is survived by his widow (née Elizabeth M. Drennan), two sons, two brothers and four sisters.

H. J. M.

RICHARD B. READ

Dr. Richard B. Read, of Columbia, Tenn., died at his home, July 25, 1937, following an illness of several weeks. He was 61 years of age.

Born near Murfreesboro, Tenn., Dr. Read studied veterinary medicine at the McKillip Veterinary College. He was graduated in 1915 and located at Columbia, where he was engaged in general practice. He was local veterinarian to the Middle Tennessee Experiment Station and an active member of the Tennessee Veterinary Medical Association. He is survived by his widow, three daughters, one sister and two brothers.

M. J.

WILLIAM HENRY DREHER

Dr. W. H. Dreher, of Oregon, Wis., passed away at his home, July 27, 1937, after an illness of almost a year.

Born in the town of Oregon, in 1885, he attended local schools before entering the Chicago Veterinary College. He was graduated in 1907 and returned to his home town to practice. He was outstandingly active in all community projects.

Dr. Dreher joined the A. V. M. A. in 1910. He is survived by his widow (née Laura Bell Sholts), two daughters, one son, two brothers and two sisters.

J. S. H.

LEWIS E. MARBRY

Dr. Lewis E. Marbry, of Centralia, Ill., died in Saint Mary's Hospital, July 30, 1937, following injuries received in automobile accident on Route 182 two days previously.

Born at Robinson, Ill., April 21, 1889, Dr. Marbry studied veterinary medicine at the Indiana Veterinary College. Following his graduation in 1911, he entered practice at Greenville, Ill.

During the World War, Dr. Marbry was commissioned as a second lieutenant in the Veterinary Corps and was directed to report for duty at Camp Wheeler, Ga., September 19, 1917. He served for a short time overseas, was promoted to first lieutenant, and was discharged on September 22, 1919.

Dr. Marbry was engaged in meat inspection work for the U. S. Bureau of Animal Industry for about two years and was also in the employ of the Illinois State Department of Agriculture on tuberculosis eradication for several years. He is survived by his widow (née Irene Berryman), two sons and three brothers.

MAJOR JOSEPH N. HORNBAKER

Major Joseph N. Hornbaker, V. C., U. S. A., retired, died at Saint Petersburg, Fla., July 31, 1937. Funeral services were held in Saint Petersburg on August 4, with interment in Arlington National Cemetery.

Born at Manassas, Va., October 4, 1876, Major Hornbaker was graduated from George Washington University, Washington, D. C., in 1911. He entered the military service as a civilian inspector of animals, in June, 1913, and was assigned to Front Royal, Va., where he remained on duty until the Veterinary Corps was organized under the Act of June 3, 1916, when he was commissioned a second lieutenant.

During the World War, Major Hornbaker was on duty in the Surgeon General's office as liaison officer to the Remount Service, where he performed very efficient work in coördinating the two services. After the World War, Major Hornbaker was assigned to duty as department veterinarian, Philippine Department, Manila, P. I. He was graduated from the Army Veterinary School, Chicago, in 1921, and was assigned to Fort Bliss, Texas, for duty, and was later transferred to Fort Huachuca, Ariz., where he was retired from active service because of physical disability, in January, 1925.

Major Hornbaker played a most important rôle in promoting the welfare of the veterinary profession when the Veterinary Corps of the Regular Army was organized under the National Defense Act of June 3, 1916. It was through his acquaintance with friends of Congressman Hay, then chairman of the House Military Committee, that brought about such active support for the profession.

Major Hornbaker joined the A. V. M. A. in 1912. Since his retirement, he had made his home in Saint Petersburg, Fla.

FREDERICK A. MILLER

Dr. Frederick A. Miller, of Fitchburg, Mass., committed suicide by hanging, at his home, on August 1, 1937. He had been in ill health for some time and had just returned from a six-week vacation on Cape Cod.

Born in East Glastonbury, Conn., February 4, 1883, Dr. Miller attended public schools in Millbury before entering the Connecticut State College. Upon his graduation in 1906, he decided to study veterinary medicine and entered the Chicago Veterinary College. He completed the course in 1908, and immediately located in Fitchburg, where he established a very nice practice. Dr. Miller was commissioned as second lieutenant in the Veterinary Corps during the World War and was stationed at Camp Greenleaf, Ga., for about three months.

Dr. Miller joined the A. V. M. A. in 1911. He was a member of the Massachusetts Veterinary Association and served as president in 1926. He was a member of the Twelfth International Veterinary Congress, Aurora Lodge, A. F. and A. M., the Fitchburg Grange, the Fitchburg Sportsman's Club and the American Legion. He is survived by his widow, one son and four stepdaughters. H. W. J.

HENRY E. ABERCROMBIE

Dr. Henry E. Abercrombie, of Cambridge, Ill., was found dead in his home, August 8, 1937. Death was attributed to heart trouble, from which he had suffered for several years. He was about 75 years of age.

Born at Aledo, Ill., Dr. Abercrombie studied veterinary medicine at the McKillip Veterinary College and was graduated in 1914. He had been engaged in general practice in Cambridge for over 20 years. Prior to entering the veterinary profession, he taught school. Dr. Abercrombie was also well known in racing circuits, not only in the capacity of a veterinarian, but as a race horse owner. His horses were regular entries in most of the races in the section of the state where he resided. He joined the A. V. M. A. in 1915.

SAMUEL KING JOHNSON

Dr. Samuel K. Johnson, of Greenwich, Conn., died suddenly at his home, August 3, 1937, of a cerebral hemorrhage. He was 83 years old.

Born in New York, N. Y., Dr. Johnson attended the American Veterinary College in that city and was graduated in 1883. He practiced in New York for over 50 years and retired several years ago. He was the first veterinarian officially employed by the State of New York and by New York City. With the late Dr. Henry Bergh, he was instrumental in founding the Society for the Prevention of Cruelty to Animals, and for many years was its official veterinarian. For a number of years, Dr. Johnson was Professor of Veterinary Medicine at New York University and for a time was a member of the New York City Board of Health.

Dr. Johnson joined the A. V. M. A. in 1883. He is survived by his widow (née Mary Huff) and one daughter.

R. S. M.

ALBERT EDISON BIXLER

Dr. Albert E. Bixler, of Upper Sandusky, Ohio, died on August 20, 1937, of injuries received in an automobile accident near the city.

Born at Pandora, Ohio, November 27, 1892, Dr. Bixler attended the Bluffton (Ohio) High School before entering the Ohio State University to study veterinary medicine. Following his graduation in 1916, he practiced at Rawson, Ohio, later locating in Upper Sandusky. He was sanitary officer for Wyandot County.

During the World War he served with the 329th Infantry for about 18 months, was overseas with the A. E. F., and honorably discharged February 15, 1919.

Dr. Bixler joined the A. V. M. A. in 1927. He was a member of the Northwestern Ohio Veterinary Medical Association and of Alpha Psi Fraternity. He is survived by his widow (née Edith Hall), two sons, one daughter, his parents and one brother.

DICKMAN DeWITT DRAGOO

Dr. D. D. Dragoo, of Rushville, Ind., died at his home, August 20, 1937, after an illness of about three weeks due to heart trouble.

Born at Sheridan, Ind., June 26, 1888, Dr. Dragoo attended local grade and high schools and then entered Indiana University where he pursued his studies for one year. He then transferred to the Indiana Veterinary College and was graduated in 1912. He immediately located in Rushville and practiced there continuously, except for a period of military service, until taken ill three weeks before his death.

During the World War, Dr. Dragoo was commissioned (August 22, 1917) in the Veterinary Corps as second lieutenant. He was ordered to active duty on March 5, 1918, and assigned to the 368th Infantry at Camp Meade, Md. He was overseas for about nine months and was discharged March 5, 1919.

Dr. Dragoo joined the A. V. M. A. in 1919. He was a member of the Indiana Veterinary Medical Association and the Rushville Post of Veterans of Foreign Wars. He is survived by his widow (née Anna L. Sullivan), two brothers, one of whom is Dr. James E. Dragoo, of Connersville, Ind., and one sister.

DAMASE GENEREUX

Dr. Damase Généreux, of Montreal, Quebec, Can., died at his home, August 20, 1937, after a long illness. He was 72 years of age.

Born at Saint Ambroise de Kildare, Quebec, Dr. Généreux received his preliminary education at Joliette Seminary. He then entered Laval University for the study of veterinary medicine. He was graduated in 1891 and entered general practice in Montreal. In 1902, he was made president of the Oka Veterinary School, which is now affiliated with the University of Montreal, and held the chair of animal pathology.

Dr. Généreux joined the A. V. M. A. in 1916 and was a member of the Committee on Local Arrangements for the Montreal meeting in 1923. He was a governor of the College of Veterinary Surgeons of the Province of Quebec.

Always interested in municipal affairs, Dr. Généreux represented his ward on the Montreal City Council from 1920 to 1930. During the last three years of this period, he was a member of the Executive Committee. He is survived by his widow (née Rose McMartin) and one daughter.

A. A. E.

RALPH HUDSON JOHNSON

Dr. Ralph H. Johnson died at the home of his sister, in Alpha, Ill., August 20, 1937, where he had been taken five weeks previously from a hospital in Iowa City, Iowa. Death was due to heart trouble from which he had been seriously ill since the first of the year.

Born in Alpha, Ill., November 25, 1881, Dr. Johnson attended local schools. When twelve years old he lost his left leg, having been run over by a train. He was graduated from the Alpha

High School in 1901 and started his veterinary studies at the Ontario Veterinary College. These studies were completed at the Chicago Veterinary College in 1909. He practiced at Woodhull, Sherrard and Alpha, Ill., Des Moines, Iowa, and Mankato, Minn.

Dr. Johnson joined the A. V. M. A. in 1916. He is survived by his widow (née Gertrude Knutter), one daughter, one son, his father, one sister and one brother.

WILLIAM LEWIS SCOFIELD

Dr. William L. Scofield, of Athens, Mich., was killed in an automobile accident, at North Cayuga, Ontario, Canada, August 22, 1937. His car was struck by another car, he was hurled out, sustaining multiple fractures of the skull, and died instantly. Mrs. Scofield was not thrown from the car, but suffered from shock, bruises and lacerations.

Born in Penn Yan, N. Y., Dr. Scofield was graduated from Keuka College, at Keuka Park, N. Y., before he studied veterinary medicine. He attended the Grand Rapids Veterinary College and later the Terre Haute Veterinary College. Upon his graduation from the latter institution in 1911, he practiced for four years in New York and for the past 16 years had been located at Athens, Mich.

PERSONALS

MARRIAGES

Dr. W. A. Winslade (Iowa '34), of Shipman, Ill., to Miss Lea Ketterer, of Prairie Du Rocher, Ill., in that city, July 28, 1937.

Dr. E. E. Slatter (O. S. U. '30) to Miss Marjorie Gibson, both of Saint Joseph, Ill., in that city, August 14, 1937.

PERSONALS

Dr. Arthur F. North, Jr. (Corn. '35) reports a change of address from Deal, N. J., to Somerville, N. J.

Dr. James L. Boydston (Mich. '37), of Sturgis, Mich., has been appointed City Meat and Milk Inspector.

Dr. B. J. Sinkler ((Iowa '37) reports a change of address from Baxter, Iowa, to New Sharon, same state.

Dr. Frank T. Harris (Wash. '28), formerly of Caldwell, Idaho, is now located at Fallon, Nev., for general practice.

DR. RICHARD A. HUEBNER (U. P. '36) is now stationed at Harrington, Del., with the Supplee-Wills-Jones Milk Company.

DR. IRVIN T. REED (Colo. '32), who has been at the Alabama Polytechnic Institute, gives his new address as Dumas, Ark.

DR. THEODORE M. BARR (Mich. '37), of Detroit, Mich., is now associated with Dr. H. E. Wright (Mich. '18), of Ann Arbor, Mich.

DR. WALTER R. BAYNES (O. S. U. '22), of Enfield, N. C., has accepted a position with the North Carolina Department of Agriculture.

DR. JAMES B. WAY (K. C. V. C. '14), of Louisville, Ky., has been retired from active service in the U. S. Bureau of Animal Industry.

DR. W. W. AICHELMAN (Colo. '32) has resigned from the U. S. Bureau of Animal Industry and has entered general practice at Fort Lupton, Colo.

DR. PEARL B. MCGOWAN (Cin. '08) has returned to practice at Seaman, Ohio, after six months of service with the U. S. Bureau of Animal Industry.

DR. F. D. PATTERSON (A. P. I. '21), who has been at the Alabama Polytechnic Institute, Auburn, for several years, is now located at Cuthbert, Ga.

DR. DANIEL E. DECAMP (K. S. C. '29) has resigned from the U. S. Bureau of Animal Industry and has returned to the Bureau of Agricultural Economics, on poultry inspection.

DR. W. A. LAWRENCE (Colo. '36), formerly associated with Dr. S. R. Espy in Oklahoma City, Okla., is now with the Blue Cross Dog and Cat Hospital, in San Antonio, Texas.

DR. T. W. WHITE (San. Fran. '12), of Boise, Idaho, is president of the Idaho State Field Trial Association, which will hold the third annual fall field trials at Jerome, Idaho, during October.

DR. C. L. LEHMAN (Chi. '17), of Flanagan, Ill., received serious injuries about the face when he was kicked by a mare on July 24. He was treating a newborn colt when the accident occurred.

DR. L. E. STARR (O. S. U. '13), who has been at the Virginia Polytechnic Institute for a number of years, has accepted a position on the veterinary faculty of the Alabama Polytechnic Institute at Auburn.

DR. G. S. HARSHFIELD (O. S. U. '26), who has been assistant professor at the North Dakota Agricultural College for seven years, has accepted a position at Colorado State College as assistant professor of pathology.

DR. SOL G. STEPHAN (O. S. U. '36), veterinarian to the Cincinnati Zoo, addressed Amritz Temple No. 122, Dramatic Order Knights of Khorassan, on July 20. He told of his experiences with wild animals in captivity.

DR. KENNETH J. MOYE (K. C. V. C. '14), who has been in the employ of the U. S. Bureau of Animal Industry for several years, has returned to private practice. He is located at Cabool, Mo., where he has purchased a home.

DR. BRUCE H. STATON (A. P. I. '34), who has been with the North Carolina Department of Agriculture at Raleigh, has gone to Durham, N. C., to accept a position as meat inspector with the Health Department of that city.

DR. F. S. GRAZIADEI (Corn. '29) has resigned from the U. S. Bureau of Animal Industry to accept a position with the New York Department of Agriculture and Markets. He is now stationed at Adams, N. Y., on tuberculosis eradication.